**1990**
Edition

# Medical Groups in the U.S.

## A Survey of Practice Characteristics

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**American Medical Association**

**Division of Survey and Data Resources**

**Department of Professional Activities Information**

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# Foreword

One mission of the American Medical Association is to provide the most authoritative, comprehensive, and accurate information possible on physicians and their practice characteristics. Such information is essential for informed decisions regarding health care policies and for communicating effectively with physicians.

As this latest edition of *Medical Groups in the U.S.* shows, group practice has experienced tremendous growth in the last few decades. As group practice of medicine grows it becomes increasingly important to understand the impact such settings have on how medicine is practiced.

The American Medical Association has periodically published statistical monographs describing the population of medical group practices. This publication departs in a number of ways from former efforts. The 1990 edition extends the 1984 edition and more extensively reflects the current health care environment. More detailed information is presented regarding medical group practices' relationships with two increasingly prevalent types of health care organizations: Health Maintenance Organizations (HMOs) and Preferred Provider Organizations (PPOs). Further, for the first time, this publication incorporates data on HMOs and PPOs from other sources in order to more fully examine and understand their impact on medical group practices. This publication is the product of a totally redesigned group practice data base which enhances the processing and maintenance of the data, and hence their accuracy, quality, and the extent of additional analysis that is possible.

Norbert W. Budde, PhD, Director,
Division of Survey and Data Resources

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*Chapter 1*

# Introduction

This monograph is the sixth in a series of publications on medical group practices produced by the American Medical Association (AMA). The five previous publications were produced in 1965, 1969, 1975, 1980, and 1984. The purpose of these publications has been to describe medical group practices and highlight trends in this mode of medical practice based on data collected via census surveys.

Although the first publication in this series was produced in 1965, the AMA first conducted a study of medical group practices in the 1930s. The 1932 study was conducted in response to various events taking place in the medical environment at the time. What is remarkable is that the medical environment that gave rise to the 1932 study was strikingly similar to the current medical environment, and the topics of study were very similar to those of the present study. The medical environment of the 1930s, like that of today, was characterized by concerns with the cost and quality of medical care and the patient-practitioner relationship, and both studies focused on the organizational characteristics of group practice.

To put the present study into context and to explain why studying medical group practices is important, this chapter describes the first AMA study of medical groups and the events precipitating it and, where possible, draws parallels between the first study and the present one. For those readers who neither need nor desire context, the methodology for the present study is described in Chapter 2. Readers simply interested in counts are directed to the table of contents and the data contained in Chapters 3 through 8.

Although group practice originated in the 1880s with the establishment of the Mayo Clinic (Starr 1982), this form of medical practice didn't really capture the AMA's interest until the 1920s (*JAMA* 1921). One reason group practices were noticed at this time was that they were beginning to proliferate. Stevens (1971) suggests two reasons for the formation of groups during this period: (1) the increasing specialization of physicians and (2) the preference for the coordination of treatment that physicians experienced while serving in World War I, a coordination inherent in group practice.

While the AMA never opposed the development of group practices (*JAMA* 1941; *Proceedings of the House of Delegates* 1970), it was concerned about other developments in the practice of medicine occurring at this time that were linked to group practice. These developments were contract practice, corporate practice, and the recommendations for reform proposed by the Committee on the Costs of Medical Care (1932).

Contract practice originated prior to the turn of the century among industries located in isolated areas, such as mining, lumber, and railroads (Starr 1982). To ensure treatment for employment-related injuries, companies sometimes found it necessary to provide medical services to their employees. Medical services were provided by contracting with or directly employing providers. By the 1930s a variety of organizations such as mutual benefit associations, lodges, and independent group practices, including Ross-Loos Clinic and Kaiser were engaged in contract practice (Leland 1932; Starr 1982).

The Judicial Council of the AMA defined contract practice in 1926 as: *the carrying out of an agreement between a physician or group of physicians as principals or agents and a corporation, organization or individual to furnish partial or full medical services to a group or class of individuals for a definite sum or a fixed rate per capita* (Blasingame 1959, 122). The AMA's concerns

about this form of practice included that it limited the patient's choice of physician, solicited patients, and provided inadequate compensation, sometimes resulting in inadequate care. On the other hand, the AMA recognized that under some conditions, such as in isolated areas, contract practice was the only way in which competent medical service could be provided.

The concept of corporate practice overlaps that of contract practice. Corporate practice involves the mediation of the patient-physician relationship by a corporation (Starr 1982). During the first three decades of this century, a number of different institutions were perceived to mediate this relationship, including industrial employers, hospitals, and group practices (Starr 1982), as well as educational institutions (Fishbein 1947).

The AMA's objections to the corporate practice of medicine are illustrated in a statement made in 1929 by the Judicial Council: *With regard to the practice of medicine by corporations, it is the opinion of the Judicial Council, based on present evidence that such practice is detrimental to the best interests of scientific medicine and of the people themselves. When medical service is made impersonal, when the humanities of medicine are removed, when the coldness and automaticity of the machine are substituted for the humane interest inherent in individual service and the professional and scientific independence of the individual physician, the greatest incentive to scientific improvement will be destroyed and the public will be poorly served* (Fishbein 1947, 385). In other words, the medical profession was concerned that physicians employed by profit-oriented corporations would make medical decisions that were in the interests of their employers, rather than in the interest of their patients. It was feared that this conflict of interests would both harm the patient and impede the development of medicine.

In addition to concerns about the restrictions on physician autonomy and the violation of the sanctity of the physician-patient relationship, the objections of the AMA to corporate practice also stemmed in part, it seems, from concerns about competition to the solo practitioner from these forms of practice. In a comment about group practice printed in a 1921 issue of the *Journal of the American Medical Association (JAMA)* the following questions were asked: *What of the physicians outside the group? Some evidently are seeing the advantages and are forming other groups—perhaps in some instances forced to do so in self-defense! . . . . Does it mean that the family physician is being replaced by a corporation?* (*JAMA* 1921, 452-453). In the 1930s, also in the pages of *JAMA*, it was suggested that corporate practices created a different type of competition, pitting groups with the advantages of organization against individually practicing physicians (Davis 1932, 1660).

Concerns about autonomy, the physician-patient relationship, and competition were also elements in the reaction to the last of a series of reports produced by the Committee on the Costs of Medical Care. The Committee was established in 1927 to investigate and propose solutions to existing problems with the cost and delivery of medical care, particularly for the indigent. Funded by eight foundations, including the Carnegie Corporation, the Josiah Macy, Jr., Foundation, and the Milbank Memorial Fund, the Committee was composed of 50 members representing medicine, public health, the social sciences, institutions and special interests, and the general public (Committee on the Costs of Medical Care 1932). The AMA was represented by Dr. Olin West, Secretary of the AMA.

Among its many research projects, the Committee completed a study of 55 multispecialty medical group practices in 1931. The resulting report concluded that group practices could provide "good medical care with economies from which either or both the clinic members and the public may benefit" (Rorem 1931, 110). The results of this study were incorporated into the Committee's final report. Among its recommendations for improving access and controlling costs, this report encouraged the reorganization of medical services through the development and diffusion of group practices across the nation (Committee on the Costs of Medical Care 1932). The Committee thought that the formation of medical groups combined with group payment plans for the poor might forestall the development of compulsory health insurance (Starr 1982).

Not all physicians endorsed this recommendation, as illustrated by the actions of some of the Committee members. Seven of the 17 private practitioners, the AMA representative, and the representative from the Catholic Hospital Association filed a minority report. The minority report stated that it was not believed "that group practice offers any real solution to the problems of the costs of medical care except under very restricted conditions" (Committee on the Costs of Medical Care 1932, 162). Rather than organizing medical practice in groups, the minority recommended that "united attempts be made to restore the general practitioner to the central place in medical practice" (Committee on the Costs of Medical Care 1932, 173).

The AMA conducted its own study of medical group practices in 1932, partially as an attempt to verify the

results obtained by the Committee on the Costs of Medical Care. The AMA study, using a definition of medical group practice less stringent than that used by the Committee, asked the secretaries of county medical societies, some of whom themselves were group physicians, to enumerate the group practices in their counties (*JAMA* 1933a). Those secretaries who identified groups in their areas were also surveyed about the opinions on group practice held by local societies and physicians. Most of these individuals felt that contrary to the findings of the Committee on the Costs of Medical Care, group practice did not reduce cost to the patient. However, other advantages to the patient were identified, such as more thorough service and the convenience of having services performed at one location. Advantages and disadvantages to the physician were also identified.

In the second phase of this early study, the 300 groups that were identified were asked to complete a questionnaire describing their group. The survey included questions about the number and specialty of physicians, legal form of organization, year of formation, equipment ownership, hospital relationship, financial relations with patients, expenses, and distribution of income. Of the 300 groups, 239 responded (*JAMA* 1933b). Although the study noted that it was difficult to define and identify group practices, it found, among other things, that the average number of physicians per group was six, most groups were partnerships, and there was no standard composition of specialties within groups.

Thus, the AMA's first study of group practices in 1932 was prompted by a number of developments in medicine during the 1920s and 1930s that were related to the group practice of medicine. Remarkably, many of the concerns about these developments are still valid today. However, these concerns are no longer linked to group practice specifically but, rather, to the more general notion of managed care, which affects practices of all sizes.

Today's medical environment, like that of the 1930s, is characterized by a concern with the cost of medical care. That Americans now spend over 11 percent of gross national product (GNP) on medical care is viewed by many with alarm. As a response to this concern, Health Maintenance Organizations (HMOs) and Preferred Provider Organizations (PPOs) proliferated, and the concept of managed care was born. The term managed care describes a variety of health care arrangements in which both costs and care are "managed" (Hale and Hunter 1988).

The criticism made in the late 1920s that contract practice limited the patient's choice of physician can be made today about many forms of managed care plans. Most HMO models limit choice of physician by not paying for care provided by a physician outside the plan. That free choice of physician, the patient-practitioner relationship, is still a viable issue is illustrated by the fact that recent growth in HMO membership has been attributed to the development of open-ended HMOs that allow the enrollee to use non-HMO providers at point of service (Gruber et al. 1989).

The early concerns that inadequate compensation offered by contract practice sometimes resulted in inadequate care and that corporate practice divided the loyalties of physicians also have resurfaced in more recent concerns expressed in the media and in the literature about the quality and quantity of care provided by some managed care plans. Although past studies indicate that the quality of care offered by prepaid and fee-for-service settings is not very different, despite differences in utilization (Ware et al. 1986), Luft (1988) notes that because of recent changes in the medical care environment, these studies may no longer be valid. Certainly incentives to undertreat exist within some managed care arrangements, and anecdotal evidence indicates that rationing may be taking place (Rankin 1986; Scovern 1988).

Unlike the feeling in the 1930s, however, the concept of group practice no longer seems to generate concern. Current data indicate that group practices coexist with solo practices. Although the number of groups continues to increase steadily (see Chapter 8 for a discussion of trends), almost half of patient care physicians report being in solo practice (Emmons 1988). Given the current medical care environment, group practice is the choice of many young physicians (Thomas-Forgues et al. 1984), and it has been described as a "haven for the beleaguered private practitioner" (Caldwell 1987).

Today, then, it is important to study medical group practices not because they are a potential threat but because they are an important practice choice among a myriad of choices. Each practice arrangement represents a distinct set of responsibilities and opportunities for physicians, and each practice arrangement must address the issues of quality, quantity, cost of, and access to medical care. Because group practice represents an increasingly significant practice arrangement, the ways in which these issues are resolved have implications for the present and future delivery of medical care.

Given the similarity of the medical environments at the time of the first AMA study of group practices and at the present time, the types of questions asked are similar as well. The present survey, as the first one, inquired about size and specialty composition (Chapter 3), legal form of organization (Chapter 5), and hospital relationships (Chapter 6). In addition, the present study asked about relationships to HMOs, PPOs, and Medicare (Chapter 6), as well as facility ownership and computer usage (Chapter 4).

The next chapter describes the methodology of the present study, and Chapter 8 describes trends in group practice, using data from the census surveys conducted by the AMA beginning in 1965.

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*Chapter 2*

# Methods

The AMA's 1988 Census of Medical Groups was conducted by the Division of Survey and Data Resources (SDR). SDR is the unit of the AMA that maintains the Physician Masterfile. The Physician Masterfile contains data on all Doctors of Medicine in the United States who have completed or are completing requirements to practice medicine and on U.S.-trained physicians who are temporarily located overseas. The Group Practice Data Base became a component of the Physician Masterfile in 1984.

This chapter describes the methods used to conduct the 1988 Census of Medical Groups, including the definition of medical group practice, the design of the survey instrument, the study design, and the study population. Finally, it describes how the results are presented.

## Definition of Medical Group Practice

In preparation for the census, SDR devoted considerable effort to reviewing the AMA's definition of medical group practice, which was originally developed in 1964. The definition was reviewed regarding its validity in the current medical environment. SDR determined that this definition was indeed general enough to include the rich variety of organizations existing today that fall under the rubric of group practice. Adhering to the original definition had the additional advantage of permitting an analysis of trends, because this definition was used in the census surveys conducted by the AMA in 1969, 1975, 1980, and 1984. Thus the study population, medical group practices, is defined as: *the application of medical service by three or more physicians formally organized to provide medical care, consultation, diagnosis, and/or treatment through the joint use of equipment, records, and personnel, and with income from medical practice distributed according to some prearranged plan.*

As stated above, this definition encompasses a wide variety of organizations. Note that although medical group practices are frequently owned by physicians, it is not a requirement of the definition. To provide the reader with a better idea of the kinds of organizations that may be regarded as medical group practices, it is necessary to describe, with examples, how this definition was applied.

Hospitals and physicians may be related in a variety of ways, only some of which may be regarded as group practice. So, for example, the definition does not include hospitals that directly employ physicians, but it does include formally organized groups of physicians that contract with hospitals to provide services such as emergency care, radiology, etc. In the former case, physicians are hospital employees, and in the latter case, although physicians may be hospital-based, the physician group is distinct from the hospital. The AMA's definition of group practice also includes formally organized groups of physicians that are owned by hospitals. Again, the group is distinct from the hospital, although it may be owned by the hospital.

HMOs and physicians may also be related in a variety of ways, only some of which may be regarded as group practice. For example, the definition includes staff model HMOs, defined by Interstudy (Gruber, et al. 1990) as an HMO that delivers health services through a physician group controlled by the HMO unit, but it does not include group model HMOs, defined by Interstudy (Gruber, et al. 1990) as an HMO that contracts with one independent group practice to provide health services. In the former case, the HMO is essentially the group practice, but in the latter case, the group is distinct from the HMO. In this latter case, it is the independent group practice that would fall within the definition.

## Survey Instrument

In designing the survey form, SDR staff conducted a series of meetings with AMA units and external groups, including Federal agencies, professional associations, and health care research organizations, to identify those factors thought to be critical to the development of medical group practices. Although several important factors were identified, two themes emerged from these meetings to guide the development of the survey:

- Medical groups' relationships to HMOs, PPOs and other alternative delivery systems and
- The level of physician control or autonomy in groups.

These two organizing themes were chosen because of the growing influence of alternative delivery systems and managed care on all aspects of the health care environment and the AMA's ever-present interest in understanding physicians' roles in groups.

Although these themes guided the items proposed for the census, the following guidelines were used to evaluate the items for inclusion on the census form:

- The respondents' burden must be minimized to achieve high rates of participation in the census;
- Items must be useful in differentiating among various types of groups; and
- Items must be identified by AMA units as necessary to maintain on a per-record basis.

A pretest of the survey instrument was conducted on different types of groups, including a faculty practice plan, a hospital-related group, a small single specialty group, a large multispecialty group, and a staff model HMO. Personal or telephone interviews were conducted to obtain respondents' comments on the difficulty of completing the form, whether the questions made sense, and how well the form described their group. The final survey instrument, both long and short form, is reproduced in Appendix A.

## Study Design

The study population consisted of groups that met the AMA's definition of medical groups and groups that potentially met this definition that were contained on the AMA's data base of medical group practices. This data base, originally constructed in 1984 from a variety of sources including the 1980 AMA Census of Medical Groups, the AMA Record of Physicians' Professional Activities, the 1983 membership rosters of the American Group Practice Association and the Medical Group Management Association, and lists from other relevant organizations, has been maintained on a continuous basis since 1984. A total of 27,014 actual or potential groups were identified on the data base.

The actual and potential groups were surveyed by mail and by telephone. The first five waves of data collection were via mail, with the final wave conducted via telephone. The first mailing was conducted in November 1987, and the telephone follow-up was conducted in July through September 1988.

The long version of the detailed questionnaire reproduced in Appendix A was used in the first three mailings. A shorter version of this questionnaire (also reproduced in Appendix A), was used in the last two mailings, as well as in the telephone follow-up. The shorter form, designed to facilitate and encourage response, asked whether the group met the AMA's definition, whether the group was part of a parent-satellite arrangement, the size and specialty composition of the group, the year the group was founded, the presence of selected administrative personnel in the group, and the group's telephone number.

Table 2-1 details the obtained response to the Census. Of the 27,014 groups surveyed, more than 7,000 were found to be ineligible. Groups were considered ineligible if it was discovered that they had dissolved, if the record was listed more than once, or if the group did not, in fact meet the AMA's definition of group practice. Groups failed to meet the AMA's definition for a number of reasons, including there were less than three physicians in the "group", or the "group" shared

**TABLE 2-1**
**Case Dispositions for the Census of Medical Groups**

| Disposition | Number |
|---|---|
| Groups surveyed | 27,014 |
| Ineligibles: | 7,282 |
| Dissolved | 325 |
| Duplicates | 705 |
| Does not meet AMA definition | 6,252 |
| Eligibles: | 19,732 |
| Noncontacts | 212 |
| Refusals | 773 |
| Unlocatable | 1,408 |
| Completes | 17,339 |
| One location groups | 13,541* |
| Multiple location groups | 3,798 |
| Parent locations | 2,803* |
| Parents constructed from satellite responses | 235* |
| Satellite locations | 760 |

*These 16,579 records represent the study population.

space, but the practices were separate. For the remaining 19,732 eligible cases, a response rate of 87.9 percent was obtained.

## Study Population

Although 17,339 valid groups completed a survey and responded that they met the AMA's definition of medical group practices, not all of these groups constitute the study population. Some groups consisted of several clinics or locations. If multiple locations of the same group responded, only the response of the parent or primary location was analyzed because this entity was instructed to report on the group as a whole. If the parent groups did not respond but satellites did, the responses of the satellites were combined to represent a single group. Thus, we included each group only once in our analysis to convey a more accurate picture of the medical group population.

Using this methodology, the 17,339 completed census forms represent a total of 16,579 group practices (Table 2-1). Of these, 13,541 represent groups with only one location, 2,803 represent parent groups, and 235 represent groups constructed out of satellite records. The analyses contained in the remaining chapters are based on these 16,579 group practices.

## Presentation of Results

Most of the analyses are presented by specialty composition and size of the group. Size of the group is defined here as the total number of physicians in the group. Specialty composition of the group refers to three categories of specialty mix: single specialty (excluding family and general practice), multispecialty, and family/general practice groups. (See Appendix B for the definition of these categories.)

These two variables, group size and specialty composition, are used to analyze the other census data because they represent fundamental organizational characteristics of groups. The specialties and the number of physicians present in a group relate to the complexity and capacity of that group. As the previous AMA publications on medical group practices have illustrated, the specialty composition and size of the group influence all other measures or characteristics of the group.

Although the focus of this report is on the group practice as the unit of analysis, when appropriate, analyses of group physician positions are also presented. Group physician positions are an estimate of the number of group physicians. The number of group physicians is estimated by summing the numbers of physicians reported by each group. However, since physicians may practice in more than one group, some physicians are counted more than once. Hence, this statistic is more accurately referred to as group physician positions. It is particularly useful to present information at the physician position level when the specialty composition of groups is analyzed.

Finally, because some groups responded to a short version of the census, not all data presented are available on all 16,579 groups. Specifically, data pertaining to questions asked on the long form only, such as hospital relationships, nonphysician staff, and facility ownership, are available on 10,744 groups. Thus, the total number of groups reported in some tables is based on 10,744 groups rather than 16,579 groups.

### Reference

Gruber, L. et al. *The Interstudy Edge*. Vol. 1. Excelsior, Minn.: Interstudy, 1990.

*Chapter 3*

# Size and Complexity

Size and complexity are two important dimensions of an organization's structure. An organization's size reflects its physical and productive capacity and the resources available to and/or required by it, while an organization's complexity reflects the differentiation of tasks within it (Hall 1982). Because size and complexity reflect fundamental characteristics of organizations, they tend to influence many other organizational characteristics.

Focusing on the clinical activities of medical group practices, size and complexity reflect the amount and scope of care delivered, respectively. Because the amount of care a group delivers is determined primarily by its number of physicians, a group's number of physicians is a good measure of size. Because groups composed of physicians with multiple specialties provide a greater range of services than single specialty groups, specialty composition of the group is a good measure of complexity.

This chapter analyzes group size, the number of nonphysician staff in the group, various aspects of specialty composition, and the relationship between size and specialty composition.

## Group Size

The number of physicians in groups ranges from three to more than 2,000. The median group size is 4, and the mean group size is 9.6 (N = 16,241). As these statistics indicate, most groups tend to be small; 50.3 percent of all groups have three or four physicians (Table 3-1). Although these small groups are numerous, they represent only 18 percent of group physicians. Conversely, groups with 100 or more physicians represent only about 1 percent of all groups but nearly 25 percent of all group physician positions.

**TABLE 3-1**
**Distribution of Groups and Group Physician Positions by Group Size**

| Group Size | Groups | | Physician Positions | |
|---|---|---|---|---|
| | % | N | % | N |
| 3 | 28.0 | 4,547 | 8.8 | 13,641 |
| 4 | 22.3 | 3,618 | 9.3 | 14,472 |
| 5-6 | 22.0 | 3,569 | 12.3 | 19,166 |
| 7-9 | 11.4 | 1,850 | 9.2 | 14,385 |
| 10-15 | 7.8 | 1,266 | 9.7 | 15,098 |
| 16-25 | 4.1 | 672 | 8.4 | 13,109 |
| 26-49 | 2.5 | 403 | 8.9 | 13,872 |
| 50-75 | 0.9 | 147 | 5.7 | 8,915 |
| 76-99 | 0.3 | 51 | 2.8 | 4,367 |
| 100 or more | 0.7 | 118 | 24.8 | 38,603 |
| Total | 100.0 | 16,241[a] | 99.9[b] | 155,628 |

[a] Excludes 388 groups with unknown size.
[b] Percentages do not sum to 100 due to rounding.

## Nonphysician Staff

The number of nonphysician staff in groups ranges from 0 to 3,000 with a mean of 18.8 nonphysician staff employed (Table 3-2). The median number of nonphysician staff is 10 (N = 10,468). Groups employ more registered nurses, licensed practical nurses, and medical assistants than any other type of staff (Table 3-2). Groups employ, on average, 2.5 nonphysician staff members per physician. This ratio of 2.5 nonphysician staff is less than the 4.1 reported by the Medical Group Management Association (MGMA) in its 1989 *Cost and Production Survey Report*. Possible explanations of the difference is that the MGMA statistic was based on a much smaller number of cases (N = 501), and the questions in the two surveys were not asked in exactly the same manner.

The number of nonphysician staff members employed by the group is directly correlated with the number of physicians (Pearson's $r = .6253$, $p < .01$, $N = 10,191$). Table 3-3 demonstrates this correlation by reporting the mean number of nonphysician staff according to group size (number of physicians).

## Specialty Composition

This section analyzes a variety of issues regarding the specialty composition of groups, including what specialties are more likely to be found in group practices and in what type of practice (single specialty or multispecialty) they are likely to be found.

**TABLE 3-2**
**Mean Number of Selected Nonphysician Staff Within Groups**

| Type of Nonphysician Staff | Mean Number of Nonphysician Staff | Total Number of Groups |
|---|---|---|
| Nurse practitioners, certified nurse anesthetists, and physician assistants | 1.0 | 10,447 |
| Registered nurses, licensed practical nurses, and medical assistants | 5.6 | 10,463 |
| X-ray and laboratory technicians and assistants | 2.8 | 10,460 |
| Registered records administrators, medical records technicians and clerks | 3.7 | 10,456 |
| Managers and administrators | 1.6 | 10,460 |
| Other | 4.3 | 10,305 |
| Total | 18.8[a] | 10,468[b] |
| Mean number of staff per physician | 2.5 | 10,191[c] |

[a] The mean numbers of each type of nonphysician staff do not sum to the total number of staff because they are not calculated on the same number of cases. In addition, the means are not necessarily based on the same groups; for example, the mean of x-ray and laboratory technicians and assistants and the mean for managers and administrators are both based on 10,460 cases, but these cases may not represent the exact same groups.

[b] Excludes 276 long-form respondents for whom the number of nonphysician staff is unknown.

[c] Excludes 553 long-form respondents for whom the number of nonphysician staff and/or the number of physicians is unknown.

**TABLE 3-3**
**Mean Total Number of Nonphysician Staff by Group Size**

| Group Size | Mean Number of Nonphysician Staff | N |
|---|---|---|
| 3 | 8.3 | 2,967 |
| 4 | 10.6 | 2,315 |
| 5-6 | 13.6 | 2,188 |
| 7-9 | 17.9 | 1,152 |
| 10-15 | 23.6 | 756 |
| 16-25 | 38.1 | 389 |
| 26-49 | 85.2 | 246 |
| 50-75 | 130.4 | 84 |
| 76-99 | 211.2 | 27 |
| 100 or more | 349.2 | 67 |
| Total | 18.8 | 10,468[a] |

[a] Excludes 276 long-form respondents for whom the number of nonphysician staff is unknown.

Table 3-4 reports the number of group physician positions, regardless of the specialty composition of the group, as a percentage of the total number of nonfederal physicians for selected specialties. Appendix C defines the specialty classifications used in this research. Those specialties most likely to be found in a group practice are anesthesiology, emergency medicine, and radiology. Those specialties least likely to be found are general surgery and psychiatry. Overall, 30 percent of all nonfederal physicians practice in groups.

Seven-tenths of all groups are single specialty (Table 3-5). Although single specialty groups represent 70 percent of all groups, they only represent a little less than half of all group physician positions (Table 3-5). Multispecialty groups, making up only 19 percent of all groups, account for about 49 percent of all group physician positions.

Although about 70 percent of all groups are single specialty, a variety of specialties are represented by these

**TABLE 3-4**
**Group Physician Positions as a Percentage of Total Nonfederal Physicians by Selected Specialties**

| Specialty | % | Number of Physician Positions | Number of Nonfederal Physicians[a] |
|---|---|---|---|
| Anesthesiology | 42.7 | 10,052 | 23,542 |
| Cardiovascular Diseases | 36.0 | 5,241 | 14,557 |
| Emergency Medicine | 91.2 | 11,461 | 12,570 |
| Family/General Practice | 25.8 | 17,302 | 67,113 |
| General Surgery | 19.8 | 7,165 | 36,242 |
| Internal Medicine | 23.6 | 21,343 | 90,272 |
| Neurology | 32.8 | 2,674 | 8,156 |
| Obstetrics/Gynecology | 29.8 | 9,390 | 31,468 |
| Ophthalmology | 25.6 | 3,886 | 15,180 |
| Orthopedic Surgery | 37.8 | 6,628 | 17,548 |
| Pathology | 33.3 | 5,072 | 15,212 |
| Pediatrics | 31.0 | 11,509 | 37,127 |
| Psychiatry | 15.4 | 4,891 | 31,741 |
| Radiology | 64.3 | 14,009 | 21,789 |
| Other Specialties | 22.2 | 17,639 | 71,839 |
| All specialties | 30.0 | 148,262[b] | 494,356[c] |

[a] Source: AMA Physician Masterfile, January 1988, Department of Physician Data Services, Division of Survey and Data Resources.

[b] Excludes 7,366 group physician positions for which specialty is unknown.

[c] Excludes physicians who are inactive, not classified, and whose addresses are unknown.

**TABLE 3-5**
**Distribution of Groups and Group Physician Positions by Specialty Composition**

| Specialty Composition | Groups | | Physician Positions | |
|---|---|---|---|---|
| | % | N | % | N |
| Single specialty | 70.6 | 11,709 | 46.2 | 71,861 |
| Family/General Practice | 9.8 | 1,618 | 5.1 | 8,007 |
| Multispecialty | 19.1 | 3,168 | 48.7 | 75,760 |
| Total | 99.5[a] | 16,495[b] | 100.0 | 155,628 |

[a] Percentages do not sum to 100 due to rounding.

[b] Excludes 84 groups with unknown specialty composition.

groups. Table 3-6 reports the number of single specialty groups and the number of physician positions in them by specialty. For example, there are 50 groups that specialize in allergy, and they represent 212 physician positions.

Some specialties are more prevalent than others among single specialty groups. About 43 percent of all single specialty groups represent one of four specialties: radiology, internal medicine, obstetrics and gynecology, and pediatrics. (Internal medicine and pediatrics are also the most and third most common, respectively, physician specialties as shown in table 3-4.) Among single specialty group physician positions, however, about 50 percent are in one of four specialties: radiology, emergency medicine, anesthesiology, and internal medicine.

A variety of specialties are also represented among multispecialty groups. The mean number of major specialties reported by multispecialty groups is four (N = 3,034). Table 3-7 reports the number of multispecialty groups with selected specialties and the number of physician positions they represent. For example, 1,712, or 54 percent, of the 3,168 multispecialty groups report including family or general practice physicians. These 1,712 groups represent 9,295 family/general practice group physician positions.

As with single specialty groups, some specialties are more prevalent than others in multispecialty groups. The specialties most frequently reported in multispecialty groups are family/general practice, internal medicine, pediatrics, general surgery, and obstetrics and gynecology; more than one third of multispecialty groups contain these specialties. However, two of these specialties account for one third of all multispecialty group physician positions: family/general practice and internal medicine.

**TABLE 3-6**
**Distribution of Single Specialty Groups and Group Physician Positions by Specialty**

| Specialty | Groups % | Groups N | Physician Positions % | Physician Positions N |
|---|---|---|---|---|
| Medical specialties: | | | | |
| Allergy | 0.4 | 50 | 0.3 | 212 |
| Cardiovascular Diseases | 4.2 | 489 | 3.5 | 2,497 |
| Dermatology | 1.0 | 114 | 0.7 | 491 |
| Gastroenterology | 1.4 | 163 | 0.9 | 636 |
| Internal Medicine | 11.3 | 1,324 | 10.9 | 7,804 |
| Pediatrics | 8.8 | 1,032 | 7.0 | 5,052 |
| Pediatric Allergy | 0.0 | 3 | 0.0 | 20 |
| Pediatric Cardiology | 0.1 | 14 | 0.1 | 70 |
| Pulmonary Diseases | 1.1 | 131 | 0.7 | 509 |
| Surgical specialties: | | | | |
| Colon & Rectal Surgery | 0.1 | 16 | 0.1 | 68 |
| Facial Plastic Surgery | 0.0 | 1 | 0.0 | 3 |
| General Surgery | 4.9 | 574 | 3.3 | 2,385 |
| Neurological Surgery | 1.3 | 156 | 1.0 | 706 |
| Obstetrics & Gynecology | 9.8 | 1,145 | 7.1 | 5,071 |
| Ophthalmology | 3.8 | 442 | 3.1 | 2,255 |
| Orthopedic Surgery | 7.8 | 913 | 6.0 | 4,300 |
| Otolaryngology | 1.8 | 208 | 1.2 | 833 |
| Plastic Surgery | 0.6 | 67 | 0.4 | 281 |
| Thoracic Surgery | 0.4 | 45 | 0.3 | 194 |
| Urological Surgery | 3.3 | 384 | 2.1 | 1,484 |
| Other specialties: | | | | |
| Anesthesiology | 7.7 | 890 | 11.3 | 8,095 |
| Child Psychiatry | 0.0 | 1 | 0.0 | 11 |
| Critical Care Medicine | 0.0 | 5 | 0.0 | 18 |
| Emergency Medicine | 4.4 | 511 | 11.4 | 8,220 |
| General Preventive Medicine | 0.0 | 3 | 0.0 | 12 |
| Neurology | 1.6 | 186 | 1.4 | 1,042 |
| Nuclear Medicine | 0.0 | 2 | 0.0 | 7 |
| Occupational Medicine | 0.2 | 25 | 0.3 | 199 |
| Pathology | 5.5 | 643 | 5.0 | 3,565 |
| Physical Medicine & Rehabilitation | 0.4 | 47 | 0.3 | 247 |
| Psychiatry | 2.3 | 267 | 3.0 | 2,130 |
| Public Health | 0.0 | 1 | 0.0 | 6 |
| Radiology | 13.2 | 1,541 | 16.0 | 11,498 |
| Radiation Oncology | 0.5 | 56 | 0.4 | 257 |
| Other | 2.1 | 241 | 2.2 | 1,582 |
| Total | 100.0 | 11,690[a] | 100.0 | 71,760[b] |

[a] Excludes 19 single specialty groups with unknown specialty.
[b] Excludes 101 physicians in single specialty groups with unknown specialty.

**TABLE 3-7**
**Number of Multispecialty Groups and Group Physician Positions by Selected Specialties**

| Specialty | Groups[a] | Physician Positions |
|---|---|---|
| Family or General Practice: | 1,712 | 9,295 |
| Medical specialties: | | |
| Cardiovascular Diseases | 921 | 2,744 |
| Internal Medicine | 2,065 | 13,539 |
| Pediatrics | 1,124 | 6,457 |
| Other medical specialties | 998 | 5,439 |
| Surgical specialties: | | |
| General Surgery | 1,483 | 4,780 |
| Obstetrics & Gynecology | 1,158 | 4,319 |
| Ophthalmology | 543 | 1,631 |
| Orthopedic Surgery | 702 | 2,328 |
| Other surgical specialties | 869 | 4,354 |
| Other specialties: | | |
| Anesthesiology | 220 | 1,957 |
| Emergency Medicine | 392 | 3,241 |
| Neurology | 513 | 1,632 |
| Pathology | 242 | 1,507 |
| Psychiatry | 376 | 2,761 |
| Radiology | 568 | 2,511 |
| Total | 3,168 | 68,495[b] |

[a] Please note that the number of groups reported with each specialty do not sum to the total number of multispecialty groups. Because multispecialty groups have physicians in more than one specialty, each group is counted more than once.
[b] Excludes 7,265 physician positions in multispecialty groups whose specialties are unknown.

Some specialties are as likely to be found in single specialty groups as in multispecialty groups, whereas others are not. For example, comparable numbers of physicians specializing in cardiovascular diseases, obstetrics and gynecology, and neurology can be found in both single specialty and multispecialty groups. On the other hand, physicians specializing in anesthesiology, emergency medicine, and radiology are much more likely to be found in single specialty than in multispecialty groups. These latter specialists tend to be hospital-based, and probably form single specialty groups to facilitate servicing contracts with hospitals. Conversely, physicians specializing in family/general practice, internal medicine, or pediatrics are more likely to be found in multispecialty than in single specialty groups, implying that primary care is more likely to be provided in multispecialty settings.

**TABLE 3-8**
**Distribution of Groups by Group Size and Specialty Composition**

| | Specialty Composition | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Single Specialty | | Multi-specialty | | Family/General Practice | | Total | |
| Group Size | % | N | % | N | % | N | % | N |
| 3 | 30.0 | 3,460 | 14.2 | 446 | 40.5 | 641 | 28.0 | 4,547 |
| 4 | 24.1 | 2,775 | 13.2 | 413 | 27.1 | 430 | 22.3 | 3,618 |
| 5-6 | 23.4 | 2,702 | 18.2 | 572 | 18.6 | 295 | 22.0 | 3,569 |
| 7-9 | 11.4 | 1,308 | 13.8 | 432 | 6.9 | 110 | 11.4 | 1,850 |
| 10-15 | 7.0 | 801 | 13.1 | 411 | 3.4 | 54 | 7.8 | 1,266 |
| 16-25 | 2.8 | 326 | 9.8 | 307 | 2.5 | 39 | 4.1 | 672 |
| 26-49 | 0.9 | 103 | 9.1 | 286 | 0.9 | 14 | 2.5 | 403 |
| 50-75 | 0.3 | 30 | 3.7 | 117 | 0.0 | 0 | 0.9 | 147 |
| 76-99 | 0.1 | 7 | 1.4 | 44 | 0.0 | 0 | 0.3 | 51 |
| 100 or more | 0.1 | 10 | 3.4 | 107 | 0.1 | 1 | 0.7 | 118 |
| Total | 100.1[a] | 11,522 | 99.9[a] | 3,135 | 100.0 | 1,584 | 100.0 | 16,241[b] |

[a] Percentages do not sum to 100 due to rounding.
[b] Excludes 254 groups with unknown size and 84 groups with unknown size and specialty composition.

**TABLE 3-9**
**Distribution of Group Physician Positions by Group Size and Specialty Composition**

| | Specialty Composition | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Single Specialty | | Multi-specialty | | Family/General Practice | | Total | |
| Group Size | % | N | % | N | % | N | % | N |
| 3 | 14.4 | 10,380 | 1.8 | 1,338 | 24.0 | 1,923 | 8.8 | 13,641 |
| 4 | 15.4 | 11,100 | 2.2 | 1,652 | 21.5 | 1,720 | 9.3 | 14,472 |
| 5-6 | 20.1 | 14,473 | 4.1 | 3,103 | 19.9 | 1,590 | 12.3 | 19,166 |
| 7-9 | 14.1 | 10,158 | 4.5 | 3,386 | 10.5 | 841 | 9.2 | 14,385 |
| 10-15 | 13.2 | 9,492 | 6.6 | 4,984 | 7.8 | 622 | 9.7 | 15,098 |
| 16-25 | 8.7 | 6,254 | 8.0 | 6,052 | 10.0 | 803 | 8.4 | 13,109 |
| 26-49 | 4.8 | 3,435 | 13.2 | 10,029 | 5.1 | 408 | 8.9 | 13,872 |
| 50-75 | 2.4 | 1,743 | 9.5 | 7,172 | 0.0 | 0 | 5.7 | 8,915 |
| 76-99 | 0.8 | 587 | 5.0 | 3,780 | 0.0 | 0 | 2.8 | 4,367 |
| 100 or more | 5.9 | 4,239 | 45.2 | 34,264 | 1.2 | 100 | 24.8 | 38,603 |
| Total | 99.8[a] | 71,861 | 100.1[a] | 75,760 | 100.0 | 8,007 | 99.9[a] | 155,628 |

[a] Percentages do not sum to 100 due to rounding.

## Size and Specialty Composition

As these data imply, and as Table 3-8 and 3-9 show, multispecialty groups tend to be larger than single specialty or family/general practice groups. Whereas 45 percent of the physicians in multispecialty groups are in groups with 100 or more physicians, only 6 percent of the physicians in single specialty groups and 1 percent of the physicians in family/general practice groups are.

## Summary

In sum, most groups are single specialty and most groups are small. Nevertheless, almost half of all group physicians can be found in multispecialty groups and almost one fourth of all group physicians can be found in very large groups with 100 or more physicians. The data also indicate that among medical group practices, size is correlated with specialty composition.

Although all specialties can be found in either single specialty or multispecialty groups, some specialties are more likely to be found in one kind of group rather than in the other. Hospital-based specialties are more likely to be found in single specialty groups, as are most surgical specialties. Most primary care specialties are more likely to be found in multispecialty groups.

In Chapter 1 it was noted that in the 1930s, some members of the Committee on the Costs of Medical Care did not support the committee's recommendation to foster the development of medical group practices throughout the country, but recommended instead that "united attempts be made to restore the general practitioner to the central place in medical practice" (Committee on the Costs of Medical Care 1932, 173). According to the data reported here, the primary care physician is central to many medical group practices. About 10 percent of all groups are composed entirely of family or general practitioners; among multispecialty groups, 54 percent include family or general practitioners, 65 percent include physicians specializing in internal medicine, 35 percent include physicians specializing in pediatrics, and 36 percent include physicians specializing in obstetrics and gynecology; among single specialty groups, about 30 percent are composed entirely of physicians specializing in internal medicine, pediatrics or obstetrics and gynecology.

## References

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*Chapter 4*

# Technology

Medical knowledge and technologies are continuously advancing. As innovations in knowledge and technology influence how care is delivered, it is important to know which technologies are incorporated into medical group practices and to what extent. This chapter focuses on one aspect of technology, the "tools" group practices use to practice medicine. Specifically, this chapter focuses on whether the group owns or leases selected medical facilities and whether the group uses computers for selected applications.

## Medical Facilities

The facilities incorporated by medical group practices relate to the range of services they provide and are indicators of the extent to which services are being shifted from hospital to ambulatory settings. Medical group practices were asked whether they owned or leased pharmacy, clinical laboratory, radiology, electrocardiology, audiology, optometer, or surgical suite facilities. Table 4-1 reports their responses. Although the majority of medical group practices neither own nor lease these seven facilities, those that do are more likely to own or lease clinical laboratory, radiology, or electrocardiology facilities. Possible explanations for the greater incorporation of these facilities into the practice include facilitating diagnosis, enhancing convenience to the patient, and generating revenue.

Recently, the government has been concerned about the economic incentives and the quality of testing associated with the use of in-office clinical laboratories. The AMA's 1988 Socioeconomic Monitoring System survey found that 40 percent of nonfederal, patient-care physicians have in-office labs that generate about 9 percent of their total revenue (AMA Center for Health Policy Research 1989). The group practice data reported in Table 4-1 indicate that about 28 percent of all groups own or lease a clinical lab. This difference in ownership between groups and physicians in general may be explained by different ideas regarding what constitutes a clinical lab. For example, the clinical laboratory services required by a solo-practicing general practitioner are probably not as extensive as those

**TABLE 4-1**
**Distribution of Groups by Ownership of Selected Medical Facilities**

| | Facilities | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ownership | Pharmacy | | Clinical Laboratory | | Radiology | | Electro-cardiology | | Audiology | | Optometer | | Surgical Suite | |
| Status | % | N | % | N | % | N | % | N | % | N | % | N | % | N |
| Own | 3.6 | 341 | 27.6 | 2,723 | 31.5 | 3,143 | 27.8 | 2,671 | 15.6 | 1,468 | 5.3 | 483 | 7.5 | 688 |
| Lease | 2.3 | 221 | 1.8 | 173 | 2.5 | 249 | 1.1 | 110 | 0.8 | 75 | 0.6 | 55 | 1.1 | 101 |
| Neither | 94.1 | 8,993 | 70.6 | 6,968 | 66.0 | 6,591 | 71.1 | 6,826 | 83.6 | 7,893 | 94.1 | 8,628 | 91.4 | 8,432 |
| Total | 100.0 | 9,555[a] | 100.0 | 9,864[b] | 100.0 | 9,983[c] | 100.0 | 9,607[d] | 100.0 | 9,436[e] | 100.0 | 9,166[f] | 100.0 | 9,221[g] |

[a] Excludes 1,189 long-form respondents for whom pharmacy ownership is unknown.
[b] Excludes 880 long-form respondents for whom clinical laboratory ownership is unknown.
[c] Excludes 761 long-form respondents for whom radiology ownership is unknown.
[d] Excludes 1,137 long-form respondents for whom electrocardiology ownership is unknown.
[e] Excludes 1,308 long-form respondents for whom audiology ownership is unknown.
[f] Excludes 1,578 long-form respondents for whom optometer ownership is unknown.
[g] Excludes 1,523 long-form respondents for whom surgical suite ownership is unknown.

**TABLE 4-2**
**Percentage of Groups That Own or Lease Selected Medical Facilities by Group Size**

| | Size | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 3 | | 4 | | 5-6 | | 7-9 | | 10-15 | | 16-25 | | 26-49 | | 50-75 | | 76-99 | | 100 or more | |
| Facilities | % | Total N | % | Total N | % | Total N | % | Total N | % | Total N | % | Total N | % | Total N | % | Total N | % | Total N | % | Total N |
| Pharmacy[a] | 2.0 | 2,717 | 2.8 | 2,122 | 3.4 | 2,008 | 5.9 | 1,007 | 10.2 | 685 | 20.1 | 359 | 42.0 | 236 | 37.5 | 80 | 47.8 | 23 | 34.7 | 72 |
| Clinical laboratory[b] | 23.4 | 2,785 | 26.8 | 2,189 | 27.0 | 2,060 | 32.4 | 1,059 | 34.2 | 710 | 46.2 | 372 | 66.7 | 243 | 63.1 | 84 | 77.8 | 27 | 49.3 | 73 |
| Radiology[c] | 27.2 | 2,812 | 28.8 | 2,185 | 31.3 | 2,084 | 41.6 | 1,097 | 42.8 | 738 | 55.8 | 380 | 68.2 | 245 | 66.3 | 83 | 72.0 | 25 | 56.2 | 73 |
| Electro-cardiology[d] | 27.6 | 2,750 | 24.7 | 2,126 | 23.4 | 1,996 | 29.9 | 1,026 | 32.5 | 680 | 44.6 | 363 | 66.8 | 235 | 63.8 | 83 | 88.5 | 26 | 55.6 | 72 |
| Audiology[e] | 12.6 | 2,703 | 13.1 | 2,097 | 11.9 | 1,962 | 14.9 | 993 | 20.7 | 668 | 34.4 | 355 | 59.7 | 233 | 59.0 | 83 | 79.2 | 24 | 57.0 | 72 |
| Optometer[f] | 3.8 | 2,662 | 3.9 | 2,058 | 3.9 | 1,920 | 4.2 | 950 | 6.0 | 631 | 12.4 | 330 | 36.0 | 211 | 42.7 | 75 | 52.4 | 21 | 42.2 | 64 |
| Surgical suite[g] | 7.5 | 2,662 | 7.0 | 2,061 | 6.4 | 1,935 | 8.8 | 957 | 9.3 | 645 | 14.8 | 337 | 25.8 | 217 | 35.1 | 74 | 40.9 | 22 | 30.9 | 68 |

[a] $\chi^2 = 1{,}166.0$, df = 9, $p < .01$.
[b] $\chi^2 = 377.0$, df = 9, $p < .01$.
[c] $\chi^2 = 421.9$, df = 9, $p < .01$.
[d] $\chi^2 = 381.3$, df = 9, $p < .01$.
[e] $\chi^2 = 752.3$, df = 9, $p < .01$.
[f] $\chi^2 = 847.0$, df = 9, $p < .01$.
[g] $\chi^2 = 260.0$, df = 9, $p < .01$.

**TABLE 4-3**
**Percentage of Groups That Own or Lease Selected Medical Facilities by Specialty Composition**

| | Specialty Composition | | | | | |
|---|---|---|---|---|---|---|
| | Single Specialty | | Multi-specialty | | Family/General Practice | |
| Facilities | % | Total N | % | Total N | % | Total N |
| Pharmacy[a] | 1.0 | 6,641 | 21.0 | 1,902 | 9.2 | 951 |
| Clinical laboratory[b] | 16.6 | 6,793 | 59.0 | 2,013 | 56.2 | 991 |
| Radiology[c] | 24.5 | 6,955 | 57.6 | 1,979 | 53.8 | 986 |
| Electro-cardiology[d] | 13.2 | 6,636 | 62.2 | 1,938 | 69.5 | 971 |
| Audiology[e] | 6.6 | 6,591 | 40.0 | 1,847 | 38.1 | 937 |
| Optometer[f] | 2.2 | 6,526 | 17.9 | 1,696 | 9.8 | 884 |
| Surgical suite[g] | 4.4 | 6,513 | 20.2 | 1,760 | 15.8 | 887 |

[a] $\chi^2 = 1{,}092.6$, df = 2, $p < .01$.
[b] $\chi^2 = 1{,}731.1$, df = 2, $p < .01$.
[c] $\chi^2 = 943.3$, df = 2, $p < .01$.
[d] $\chi^2 = 2{,}628.2$, df = 2, $p < .01$.
[e] $\chi^2 = 1{,}542.0$, df = 2, $p < .01$.
[f] $\chi^2 = 631.7$, df = 2, $p < .01$.
[g] $\chi^2 = 507.8$, df = 2, $p < .01$.

required by a multispecialty group with 25 physicians. Thus, group practices may define clinical laboratory services in terms of a broader range of laboratory services that they find more economical to purchase than to support internally.

Ownership of facilities varies by size and specialty composition. Table 4-2 reports by group size the percentage of groups that own or lease these facilities. For each medical facility, the percentage of groups that own or lease tends to increase as the size of the group increases.

Table 4-3 reports by specialty composition the percentage of groups that own or lease these facilities. For every type of medical facility, except electrocardiology facilities, multispecialty groups are more likely to own or lease, followed by family/general practice groups. Single specialty groups are probably least likely to own or lease these facilities because not all of these facilities are appropriate for all specialties. For example, an internal medicine group would not own or lease a surgical suite.

## Computer Usage

Advances in technology include the increasing use of computers in the practice of medicine. Medical groups were asked whether they used or planned to use computers for certain applications. The specific applications medical groups were asked about include clinical records, online medical information, and drug utilization review.

Table 4-4 reports the percentages of groups that currently use, plan to use, or do not currently use or plan to use computers for each application. For each application, the majority of groups neither currently use computers nor do they plan to. Use of computers for clinical records is the most common of the three applications.

Computer usage varies by group size (Table 4-5) and specialty composition (Table 4-6). Larger groups are more likely to use or plan to use computers for each of the three applications. Multispecialty groups are more likely than single specialty or family/general practice groups to use or plan to use computers for each of the three applications. It may be more economical for large groups and multispecialty groups to incorporate these computer uses into their practices.

**TABLE 4-4**
**Distribution of Groups by Computer Usage for Selected Applications**

| Computer Usage | Computer Applications: Clinical Records % | Clinical Records N | Online Medical Information % | Online Medical Information N | Drug Utilization Review % | Drug Utilization Review N |
|---|---|---|---|---|---|---|
| Currently use | 20.1 | 2,071 | 15.5 | 1,578 | 3.4 | 343 |
| Plan to use | 15.6 | 1,612 | 16.8 | 1,714 | 10.3 | 1,024 |
| Does not currently use or plan to use | 64.2 | 6,618 | 67.7 | 6,891 | 86.3 | 8,596 |
| Total | 99.9[a] | 10,301[b] | 100.0 | 10,183[c] | 100.0 | 9,963[d] |

[a] Percentages do not sum to 100 due to rounding.
[b] Excludes 443 long-form respondents for whom computer usage for clinical records is unknown.
[c] Excludes 561 long-form respondents for whom computer usage for online medical information is unknown.
[d] Excludes 781 long-form respondents for whom computer usage for drug utilization review is unknown.

**TABLE 4-5**
**Percentage of Groups Currently Using or Planning to Use a Computer for Selected Applications by Group Size**

| Computer Applications | Size: 3 % | 3 Total N | 4 % | 4 Total N | 5-6 % | 5-6 Total N | 7-9 % | 7-9 Total N | 10-15 % | 10-15 Total N | 16-25 % | 16-25 Total N | 26-49 % | 26-49 Total N | 50-75 % | 50-75 Total N | 76-99 % | 76-99 Total N | 100 or More % | 100 or More Total N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Clinical records[a] | 30.4 | 2,884 | 35.0 | 2,272 | 34.9 | 2,151 | 42.0 | 1,131 | 40.2 | 766 | 43.0 | 386 | 42.9 | 252 | 50.0 | 86 | 48.2 | 27 | 52.7 | 74 |
| Online medical information[b] | 27.8 | 2,865 | 30.0 | 2,238 | 30.5 | 2,132 | 37.9 | 1,120 | 36.8 | 758 | 42.3 | 378 | 47.2 | 248 | 52.3 | 86 | 46.2 | 26 | 59.5 | 74 |
| Drug utilization review[c] | 10.8 | 2,810 | 10.9 | 2,196 | 11.8 | 2,082 | 16.4 | 1,082 | 17.6 | 742 | 22.0 | 369 | 27.5 | 240 | 43.0 | 86 | 46.2 | 26 | 45.2 | 73 |

[a] $\chi^2 = 96.0$, df = 9, $p < .01$.
[b] $\chi^2 = 143.2$, df = 9, $p < .01$.
[c] $\chi^2 = 263.9$, df = 9, $p < .01$.

**TABLE 4-6**
**Percentage of Groups Currently Using or Planning to Use a Computer for Selected Applications by Specialty Composition**

| Computer Applications | Specialty Composition: Single Specialty % | Single Specialty Total N | Multi-specialty % | Multi-specialty Total N | Family/General Practice % | Family/General Practice Total N |
|---|---|---|---|---|---|---|
| Clinical records[a] | 35.4 | 7,171 | 39.7 | 2,058 | 30.0 | 1,008 |
| Online medical information[b] | 31.1 | 7,083 | 37.1 | 2,032 | 30.5 | 1,002 |
| Drug utilization review[c] | 10.4 | 6,911 | 22.9 | 1,995 | 17.8 | 995 |

[a] $\chi^2 = 29.0$, df = 2, $p < .01$.
[b] $\chi^2 = 27.6$, df = 2, $p < .01$.
[c] $\chi^2 = 218.3$, df = 2, $p < .01$.

## Summary

Medicine is experiencing an explosion of medical information and technology. Although most groups do not own or lease the medical facilities investigated, clinical laboratory, radiology and electrocardiology facilities are more likely to be owned or leased by groups than other types of facilities. Similarly, although most groups do not use computers or plan to use them for clinical records, online medical information, or drug utilization review, computers are more likely to be used for clinical records than for the other two applications.

In addition, certain groups are more likely than others to incorporate these technologies. Larger groups are more likely than smaller groups to own or lease medical facilities or to use computers. Multispecialty groups are more likely than single specialty or family/general practice groups to own or lease medical facilities or use computers.

## Reference

AMA Center for Health Policy Research. "SMS Report." American Medical Association, Vol. 3, No. 3, May 1989.

*Chapter 5*

# Ownership and Control

An important concern of physicians today is their ability to provide quality medical care. Physicians perceive their ability to deliver quality medical care diminishing as restrictions increase on their autonomy (Bellin 1986). This chapter explores the issue of physician autonomy by examining the following characteristics of groups: legal form of organization, ownership, decision making within the group, and certain group features.

## Legal Form of Organization

Table 5-1 reports the various legal forms of organization reported by groups, and Appendix D defines these legal forms. Groups that are professional corporations are solely owned by physicians, and groups that are sole proprietorships or partnerships are likely to be solely owned by physicians. Almost 90 percent of all groups are either professional corporations or partnerships.

Table 5-2 reports how a group's legal form of organization varies by group size. As groups increase in size, they are less likely to be professional corporations or partnerships and more likely to be some other legal form, such as not-for-profit corporations.

**TABLE 5-1**
**Distribution of Groups by Legal Form of Organization**

| Legal Form of Organization | % | N |
|---|---|---|
| Professional corporation | 71.2 | 7,541 |
| Investor-owned for-profit corporation | 2.4 | 249 |
| Not-for-profit corporation | 3.4 | 364 |
| Sole proprietorship | 0.7 | 74 |
| Partnership | 16.4 | 1,741 |
| Association | 3.6 | 377 |
| Foundation | 0.4 | 46 |
| Other | 1.9 | 199 |
| Total | 100.0 | 10,591[a] |

[a] Excludes 153 long-form respondents for whom legal form of organization is unknown.

**TABLE 5-2**
**Distribution of Legal Form of Organization by Group Size**

| Legal Form of Organization | Size | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 3 | | 4 | | 5-6 | | 7-9 | | 10-15 | | 16-25 | | 26-49 | | 50-75 | | 76-99 | | 100 or more | |
| | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N |
| Professional corporation | 72.0 | 2,141 | 72.9 | 1,697 | 74.9 | 1,668 | 71.6 | 834 | 71.9 | 556 | 59.8 | 239 | 55.3 | 140 | 44.3 | 39 | 50.0 | 14 | 32.9 | 25 |
| Investor-owned for-profit corporation | 1.5 | 45 | 2.1 | 48 | 2.1 | 46 | 3.2 | 37 | 3.2 | 25 | 4.5 | 18 | 7.9 | 20 | 6.8 | 6 | 3.6 | 1 | 0.0 | 0 |
| Not-for-profit corporation | 1.1 | 34 | 1.8 | 40 | 1.8 | 40 | 3.7 | 43 | 5.6 | 43 | 15.0 | 60 | 12.6 | 32 | 20.4 | 18 | 25.0 | 7 | 36.8 | 28 |
| Sole proprietorship | 1.1 | 32 | 0.7 | 17 | 0.4 | 10 | 0.3 | 3 | 0.6 | 5 | 0.8 | 3 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 1.3 | 1 |
| Partnership | 19.2 | 570 | 17.7 | 412 | 15.2 | 339 | 14.7 | 171 | 11.5 | 89 | 10.0 | 40 | 16.2 | 41 | 15.9 | 14 | 7.1 | 2 | 7.9 | 6 |
| Association | 3.7 | 109 | 3.4 | 78 | 3.5 | 78 | 3.9 | 45 | 3.2 | 25 | 4.0 | 16 | 3.6 | 9 | 5.7 | 5 | 10.7 | 3 | 6.6 | 5 |
| Foundation | 0.1 | 3 | 0.1 | 3 | 0.4 | 8 | 0.5 | 6 | 0.5 | 4 | 1.5 | 6 | 2.0 | 5 | 4.6 | 4 | 3.6 | 1 | 5.3 | 4 |
| Other | 1.3 | 38 | 1.4 | 32 | 1.8 | 39 | 2.2 | 26 | 3.4 | 26 | 4.5 | 18 | 2.4 | 6 | 2.3 | 2 | 0.0 | 0 | 9.2 | 7 |
| Total | 100.0 | 2,972 | 100.1[a] | 2,328 | 100.1[a] | 2,228 | 100.1[a] | 1,165 | 99.9[a] | 773 | 100.1[a] | 400 | 100.0 | 253 | 100.0 | 88 | 100.0 | 28 | 100.0 | 76 |

[a] Percentages do not sum to 100 due to rounding.

**TABLE 5-3**
**Distribution of Legal Form of Organization by Specialty Composition**

| Legal Form of Organization[a] | Specialty Composition | | | | | |
|---|---|---|---|---|---|---|
| | Single Specialty | | Multi-specialty | | Family/General Practice | |
| | % | N | % | N | % | N |
| Professional corporation | 75.9 | 5,614 | 62.1 | 1,301 | 57.1 | 589 |
| Investor-owned for-profit corporation | 1.7 | 129 | 5.1 | 107 | 1.3 | 13 |
| Not-for-profit corporation | 1.3 | 94 | 9.4 | 197 | 6.1 | 63 |
| Sole proprietorship | 0.4 | 30 | 1.1 | 23 | 1.9 | 20 |
| Partnership | 15.3 | 1,133 | 15.0 | 315 | 26.6 | 274 |
| Association | 3.5 | 258 | 3.3 | 69 | 4.8 | 50 |
| Foundation | 0.3 | 23 | 0.9 | 19 | 0.3 | 3 |
| Other | 1.5 | 113 | 3.1 | 65 | 1.9 | 20 |
| Total | 99.9[b] | 7,394 | 100.0 | 2,096 | 100.0 | 1,032 |

[a] $\chi^2 = 656.7$, df = 14, $p < .01$.
[b] Percentages do not sum to 100 due to rounding.

**TABLE 5-4**
**Mean Percentage of Group Physicians Who Are Owners by Selected Characteristics**

| Characteristics | Mean % Owners | Total N |
|---|---|---|
| Group Size: | | |
| 3 | 81.2 | 4,320 |
| 4 | 75.4 | 3,453 |
| 5 - 6 | 70.4 | 3,418 |
| 7 - 9 | 64.9 | 1,750 |
| 10 - 15 | 57.6 | 1,185 |
| 16 - 25 | 52.9 | 629 |
| 26 - 49 | 51.9 | 366 |
| 50 - 75 | 43.9 | 134 |
| 76 - 99 | 43.5 | 41 |
| 100 or more | 29.9 | 88 |
| Specialty Composition: | | |
| Single specialty | 74.5 | 11,109 |
| Multispecialty | 59.3 | 2,779 |
| Family/General Practice | 69.4 | 1,508 |
| All Groups | 71.2 | 15,396[a] |

[a] Excludes 1,183 groups for which number of physician owners is unknown. Includes 12 groups with unknown size.

Table 5-3 shows how a group's legal form of organization varies by specialty composition. Single specialty groups are more likely to be professional corporations and family/general practice groups are least likely to be professional corporations. Family/general practice groups are, however, more likely than single specialty or multispecialty groups to be partnerships.

## Ownership

The legal form of organization data show that most groups are physician- owned. Groups were also asked to report the number of their physicians who are owners and the number who are employees. The percentage of a group's physicians who are owners ranges from 0 to 100 percent. Forty-three percent of all groups (N=15,396) report that 100 percent of their physicians are owners. Nine percent of all groups (N=15,396) report that less than 10 percent of their physicians are owners. The mean percentage of physician owners is 71.2 (Table 5-4).

Table 5-4 also shows that the mean percentage of physician owners decreases as group size increases. The data indicate that, on average, more than half of the physicians in groups with 50 or more physicians are employees. The greatest mean percentage of physician owners is found among single specialty groups and the smallest is found among multispecialty groups. Although the data are not shown, the mean percentage of physician owners decreases as group size increases for each specialty composition type.

## Decision Making

Medical groups were asked about the input of physicians and administrators into decisions regarding the following issues: hiring and firing of physician personnel, setting of fees, minimum number of work hours for physicians, payment of physicians' memberships in professional societies, evaluation of diagnostic equipment, evaluation of therapeutic equipment, and evaluation of medical supplies (excluding pharmaceuticals). There were five possible response categories: each physician made the decision individually, a committee of physicians made the decision, a committee of physicians and administrators made the decision, primarily administrators made the decision, or the decision was made in some other way.

Table 5-5 indicates that for each policy, for the majority of groups, the decisions are made by a committee of physicians. Administrators are more likely to have input into decisions regarding fee setting and evaluation of medical supplies than into other group policies;

more than 40 percent of the groups reported that either a committee of physicians and administrators or primarily administrators made decisions regarding these two issues. Administrators were least likely to have any input into decisions regarding evaluation of diagnostic or therapeutic equipment.

Table 5-6 reports the percentage of groups with administrators as decision makers primarily or as part of a committee, regarding each of these policies by group size. For each policy, administrators are more likely to participate in decision making in larger groups than in smaller groups.

**TABLE 5-5**
**Distribution of Groups by Decision Makers for Selected Group Policies**

| | Group Policies | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Decision Makers | Hire/Fire Physicians | | Fee Setting | | Minimum Physician Hours | | Payment of Physician Memberships | | Evaluation of Diagnostic Equipment | | Evaluation of Therapeutic Equipment | | Evaluation of Medical Supplies | |
| | % | N | % | N | % | N | % | N | % | N | % | N | % | N |
| Each physician individually | 6.2 | 639 | 5.1 | 534 | 26.0 | 2,617 | 26.0 | 2,691 | 9.3 | 945 | 9.9 | 925 | 11.0 | 1,102 |
| Committee of physicians | 55.9 | 5,761 | 51.1 | 5,345 | 56.7 | 5,706 | 51.0 | 5,272 | 61.1 | 6,207 | 62.4 | 5,838 | 43.9 | 4,386 |
| Committee of physicians and administrators | 21.3 | 2,196 | 32.8 | 3,432 | 10.8 | 1,090 | 14.1 | 1,464 | 24.6 | 2,500 | 23.0 | 2,154 | 24.2 | 2,419 |
| Primarily administrators | 11.3 | 1,165 | 7.4 | 777 | 2.8 | 281 | 5.6 | 579 | 2.6 | 264 | 2.3 | 212 | 16.6 | 1,657 |
| Other | 5.3 | 548 | 3.5 | 368 | 3.7 | 369 | 3.3 | 341 | 2.3 | 238 | 2.4 | 222 | 4.2 | 419 |
| Total | 100.0 | 10,309[a] | 99.9[b] | 10,456[c] | 100.0 | 10,063[d] | 100.0 | 10,347[e] | 99.9[b] | 10,154[f] | 100.0 | 9,351[g] | 99.9[b] | 9,983[h] |

[a] Excludes 435 long-form respondents for whom the decision maker regarding the hiring and firing of physicians is unknown.
[b] Percentages do not sum to 100 due to rounding.
[c] Excludes 288 long-form respondents for whom the decision maker regarding the setting of fees is unknown.
[d] Excludes 681 long-form respondents for whom the decision maker regarding the minimum work hours for physicians is unknown.
[e] Excludes 397 long-form respondents for whom the decision maker regarding payment for physicians' memberships is unknown.
[f] Excludes 590 long-form respondents for whom the decision maker regarding evaluation of diagnostic equipment is unknown.
[g] Excludes 1,393 long-form respondents for whom the decision maker regarding evaluation of therapeutic equipment is unknown.
[h] Excludes 761 long-form respondents for whom the decision maker regarding evaluation of medical supplies is unknown.

**TABLE 5-6**
**Percentage of Groups with Administrators Participating in the Decision Making for Selected Group Policies by Group Size**

| | Size | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Group Policies | 3 | | 4 | | 5-6 | | 7-9 | | 10-15 | | 16-25 | | 26-49 | | 50-75 | | 76-99 | | 100 or more | |
| | % | Total N | % | Total N | % | Total N | % | Total N | % | Total N | % | Total N | % | Total N | % | Total N | % | Total N | % | Total N |
| Hire/fire physicians[a] | 27.6 | 2,740 | 30.4 | 2,176 | 35.4 | 2,072 | 37.6 | 1,085 | 42.7 | 709 | 54.2 | 336 | 65.0 | 226 | 50.6 | 81 | 56.0 | 25 | 44.7 | 47 |
| Fee setting[b] | 28.5 | 2,838 | 35.8 | 2,246 | 43.2 | 2,118 | 51.0 | 1,112 | 58.8 | 725 | 71.7 | 371 | 78.7 | 244 | 73.2 | 82 | 69.2 | 26 | 70.2 | 57 |
| Minimum physician hours[c] | 7.9 | 2,722 | 10.2 | 2,174 | 13.6 | 2,051 | 18.5 | 1,078 | 25.5 | 693 | 34.0 | 347 | 35.2 | 233 | 38.8 | 80 | 30.4 | 23 | 35.7 | 42 |
| Payment of physician memberships[d] | 12.6 | 2,838 | 17.5 | 2,231 | 20.3 | 2,113 | 24.6 | 1,084 | 29.5 | 721 | 43.8 | 356 | 44.6 | 240 | 51.2 | 82 | 39.1 | 23 | 34.0 | 53 |
| Evaluation of diagnostic requipment[e] | 16.7 | 2,783 | 21.5 | 2,214 | 28.8 | 2,078 | 34.5 | 1,095 | 44.6 | 716 | 56.8 | 363 | 62.6 | 243 | 63.4 | 82 | 64.0 | 25 | 62.7 | 59 |
| Evaluation of therapeutic equipment[f] | 14.9 | 2,624 | 19.6 | 2,059 | 27.2 | 1,861 | 33.4 | 961 | 42.7 | 649 | 53.4 | 341 | 56.6 | 233 | 63.0 | 81 | 60.0 | 25 | 60.3 | 58 |
| Evaluation of medical supplies[g] | 33.2 | 2,706 | 38.4 | 2,143 | 45.3 | 1,983 | 48.3 | 1,038 | 53.2 | 690 | 61.4 | 360 | 70.3 | 232 | 74.7 | 83 | 64.0 | 25 | 63.2 | 57 |

[a] $\chi^2 = 268.0$, df = 9, $p < .01$.
[b] $\chi^2 = 697.5$, df = 9, $p < .01$.
[c] $\chi^2 = 461.9$, df = 9, $p < .01$.
[d] $\chi^2 = 431.1$, df = 9, $p < .01$.
[e] $\chi^2 = 738.0$, df = 9, $p < .01$.
[f] $\chi^2 = 688.4$, df = 9, $p < .01$.
[g] $\chi^2 = 337.4$, df = 9, $p < .01$.

**TABLE 5-7**
**Percentage of Groups with Administrators Participating in the Decision Making for Selected Group Policies by Specialty Composition**

| | Specialty Composition | | | | | |
|---|---|---|---|---|---|---|
| | Single Specialty | | Multi-specialty | | Family/General Practice | |
| Group Policies | % | Total N | % | Total N | % | Total N |
| Hire/fire physicians[a] | 28.1 | 6,816 | 53.2 | 1,925 | 41.5 | 958 |
| Fee setting[b] | 34.6 | 7,038 | 63.5 | 1,991 | 48.3 | 998 |
| Minimum physician hours[c] | 9.4 | 6,757 | 27.8 | 1,911 | 20.4 | 964 |
| Payment of physician memberships[d] | 15.4 | 6,983 | 36.2 | 1,966 | 24.4 | 994 |
| Evaluation of diagnostic equipment[e] | 21.7 | 6,861 | 47.6 | 1,996 | 30.8 | 997 |
| Evaluation of therapeutic equipment[f] | 19.4 | 6,138 | 45.0 | 1,948 | 28.8 | 987 |
| Evaluation of medical supplies[g] | 36.8 | 6,589 | 60.8 | 1,951 | 45.8 | 966 |

[a] $\chi^2 = 444.0$, df = 2, $p < .01$.
[b] $\chi^2 = 553.7$, df = 2, $p < .01$.
[c] $\chi^2 = 451.4$, df = 2, $p < .01$.
[d] $\chi^2 = 417.0$, df = 2, $p < .01$.
[e] $\chi^2 = 523.7$, df = 2, $p < .01$.
[f] $\chi^2 = 510.8$, df = 2, $p < .01$.
[g] $\chi^2 = 358.8$, df = 2, $p < .01$.

**TABLE 5-8**
**Percentage of Groups with Selected Features**

| Features | % | Total N |
|---|---|---|
| Formal peer review mechanism established by the group | 24.1 | 9,778[a] |
| Group physicians required to make referrals only to certain providers | 7.9 | 9,545[b] |
| Group physicians required to prescribe according to a formulary | 6.0 | 9,344[c] |
| Group physicians must conform to length of hospital stay guidelines | 16.3 | 9,206[d] |

[a] Excludes 966 long-term respondents for whom peer review mechanism is unknown.
[b] Excludes 1,199 long-form respondents for whom referrals only to certain providers is unknown.
[c] Excludes 1,400 long-term respondents for whom prescribing according to a formulary is unknown.
[d] Excludes 1,538 long-term respondents for whom conforming to length of hospital stay guidelines is unknown.

Table 5-7 reports the percentage of groups with administrators as decision makers regarding each of these policies by specialty composition. For each policy, administrators are more likely to be decision makers in multispecialty groups than in single specialty or family/general practice groups.

## Group Features

Groups were asked whether they had certain features that may relate to the autonomy of their physicians. These features are a formal peer review mechanism established by the group, requiring group physicians to make referrals only to certain providers, requiring group physicians to prescribe according to a formulary, and requiring group physicians to conform to length of hospital stay guidelines. Table 5-8 reports the percentage of groups that have each of these features.

None of these four features are very common among medical group practices. The most common feature is a peer review mechanism established by the group, and the least common feature is requiring physicians to prescribe according to a formulary.

## Summary

Most medical group practices are owned and controlled by physicians. Almost 90 percent of all groups are professional corporations or partnerships. On average, 71.2 percent of a group's physicians are owners. For the various group policies investigated, physicians were solely responsible for decisions in more than half of all groups. Selected group features that could restrict physicians' autonomy were not very common among medical group practices.

The size of the group, however, seems to influence the degree to which physicians control group activities. For example, groups are less likely to be owned by physicians as group size increases, regardless of specialty composition. Also, decision making within the group is more likely to be shared with administrators as group size increases.

## Reference

Bellin, L. E. "The Shrinking Autonomy of the Practicing Physician and its Impact on Quality." *Journal of Community Health* 11 (Fall 1986): 155-164.

*Chapter 6*

# Relationships to the Environment

The current medical environment demands the delivery of accessible high-quality, low-cost medical care. In order to meet these demands, 12.2 percent of all groups (N=9,565) operate an urgent care center and 14.3 percent (N=9,565) operate an outpatient surgical facility. Medical group practices have also formed a variety of relationships with other providers and purchasers of medical care in response to these demands. This chapter examines medical group practices' relationships with HMOs and PPOs, hospitals, and Medicare.

## HMOs and PPOs

HMOs and PPOs are two types of health care delivery organizations that surged in popularity in the early 1980s. Responsible for both financing medical care and delivering medical care via a selected set of providers, these organizations became popular with employers and other purchasers of care for their expected ability to control the costs of medical care. The advantages they offer to patients include all care is provided for a set fee or at a smaller out-of-pocket cost. These organizations may have some disadvantages, however, such as limiting a patient's choice of physician.

Medical group practice may be related to HMOs in a number of ways. Groups may be organized specifically to provide services to an HMO, groups may contract with an HMO (directly or through Individual Practice Associations) to provide services, or groups may do business with an HMO on a referral basis but have no formal contract. Table 6-1 reports the number of groups reporting each type of relationship, as well as the number of groups that contract with at least one PPO.

Of the three types of HMO relationship a group may have, contracting with an HMO is most common.

**TABLE 6-1**
**Percentage of Groups Related to HMOs and PPOs**

| Type of Relationship | %[a] | Total N |
|---|---|---|
| Organized to provide services to an HMO (physicians are on staff) | 7.8 | 10,193 |
| Contract with one or more HMOs (directly or through IPAs) to provide services | 50.3 | 10,199 |
| Does business with one or more HMOs on a referral basis but has no formal contract | 19.8 | 10,196 |
| Contract with any PPOs | 55.8 | 10,552 |

[a] Percentages do not total to 100 because groups could check more than one response. For example, groups that contract with HMOs may also contract with PPOs.

Approximately 8 percent of all groups are organized to provide services to an HMO. Medical groups may be related to HMOs in more than one way; 67.9 percent (N=10,200) of all medical groups report one or more of these types of HMO relationship. Fifty-six percent of all groups contract with one or more PPOs.

These data on medical groups are consistent with data obtained from the Medical Economics Continuing Survey. In this survey of office-based physicians, 53 percent were found to participate in one or more HMOs, and 45 percent participated in PPOs (Norman 1990). Of the physicians who practiced in incorporated groups of 3 or more, 68 percent were affiliated with one or more HMOs.

Table 6-2 examines how HMO and PPO relationships may vary by group size. Large groups are more likely than small groups to be organized specifically to provide services to HMOs (i.e. represent staff model HMOs) and to contract with HMOs to provide ser-

vices. Medium-sized groups, on the other hand, are more likely to do business with an HMO on a referral basis. Whether a group contracts with a PPO does not vary systematically by group size. Apparently PPOs are health plans that are popular with or can be accommodated by practices of all sizes.

Table 6-3 examines how HMO and PPO relationships vary by specialty composition. Regardless of specialty composition, groups are more likely to contract with a PPO or an HMO than be involved with an HMO on a referral or staff basis. Multispecialty groups, however, are more likely than single specialty or family/general practice groups to be organized specifically to provide services to an HMO. On the other hand, single specialty groups are more likely than multispecialty or family/general practice groups to do business with HMOs on a referral basis. This is probably true of single specialty groups because, it should be recalled from Chapter 3, single specialty groups are frequently composed of highly specialized physicians with whom HMOs would need to consult only occasionally.

**TABLE 6-2**
**Percentage of Groups Related to HMOs and PPOs by Group Size**

| | Size | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 3 | | 4 | | 5-6 | | 7-9 | | 10-15 | | 16-25 | | 26-49 | | 50-75 | | 76-99 | | 100 or more | |
| HMO and PPO Relationships | % | Total N | % | Total N | % | Total N | % | Total N | % | Total N | % | Total N | % | Total N | % | Total N | % | Total N | % | Total N |
| Staff HMO[a] | 6.5 | 2,854 | 6.2 | 2,247 | 6.9 | 2,138 | 8.0 | 1,119 | 9.9 | 741 | 10.8 | 387 | 19.5 | 251 | 20.9 | 86 | 22.2 | 26 | 35.1 | 74 |
| HMO contract[b] | 47.7 | 2,855 | 48.1 | 2,248 | 50.4 | 2,138 | 52.9 | 1,120 | 51.6 | 743 | 57.9 | 387 | 62.2 | 251 | 64.0 | 86 | 69.2 | 26 | 62.2 | 74 |
| HMO referrals[c] | 18.4 | 2,855 | 18.0 | 2,247 | 21.4 | 2,138 | 23.6 | 1,121 | 23.8 | 741 | 17.8 | 387 | 14.3 | 251 | 16.3 | 86 | 19.2 | 26 | 17.8 | 74 |
| PPO contract[d] | 53.9 | 2,959 | 55.1 | 2,333 | 56.5 | 2,215 | 59.5 | 1,152 | 60.0 | 768 | 57.3 | 398 | 57.8 | 256 | 47.7 | 88 | 53.6 | 28 | 63.5 | 74 |

[a] $\chi^2 = 179.2$, df = 9, $p < .01$.
[b] $\chi^2 = 53.2$, df = 9, $p < .01$.
[c] $\chi^2 = 35.6$, df = 9, $p < .01$.
[d] $\chi^2 = 16.3$, df = 9, p = not significant.

**TABLE 6-3**
**Percentage of Groups Related to HMOs and PPOs by Specialty Composition**

| | Specialty Composition | | | | | |
|---|---|---|---|---|---|---|
| | Single Specialty | | Multi-specialty | | Family/General Practice | |
| HMO and PPO Relationships | % | Total N | % | Total N | % | Total N |
| Staff HMO[a] | 6.3 | 7,128 | 12.8 | 1,998 | 7.4 | 999 |
| HMO contract[b] | 49.5 | 7,130 | 50.3 | 2,001 | 56.0 | 1,000 |
| HMO referrals[c] | 23.9 | 7,129 | 14.4 | 2,000 | 1.9 | 999 |
| PPO contract[d] | 57.1 | 7,361 | 52.1 | 2,088 | 53.4 | 1,034 |

[a] $\chi^2 = 90.5$, df = 2, $p < .01$.
[b] $\chi^2 = 14.7$, df = 2, $p < .01$.
[c] $\chi^2 = 311.2$, df = 2, $p < .01$.
[d] $\chi^2 = 19.3$, df = 2, $p < .01$.

**TABLE 6-4**
**Mean Percentage of Annual HMO Revenue among Groups Related to HMOs by Selected Characteristics**

| Characteristics | Mean % Revenue | Total N |
|---|---|---|
| Group Size: | | |
| 3 | 13.9 | 1,533 |
| 4 | 13.5 | 1,241 |
| 5-6 | 13.5 | 1,225 |
| 7-9 | 14.0 | 690 |
| 10-15 | 13.7 | 452 |
| 16-25 | 19.5 | 247 |
| 26-49 | 21.5 | 185 |
| 50-75 | 35.8 | 68 |
| 76-99 | 23.6 | 23 |
| 100 or more | 30.7 | 56 |
| Specialty Composition: | | |
| Single specialty | 12.2 | 4,122 |
| Multispecialty | 20.9 | 1,164 |
| Family/General Practice | 20.2 | 553 |
| All Groups | 14.7 | 5,874[a] |

[a] Includes 154 groups with unknown size. Includes 35 groups with unknown specialty composition.

**TABLE 6-5**
**Mean Percentage of Annual PPO Revenue among Groups Contracting with PPOs by Selected Characteristics**

| Characteristics | Mean % Revenue | Total N |
|---|---|---|
| Group Size: | | |
| 3 | 13.9 | 1,463 |
| 4 | 13.5 | 1,187 |
| 5-6 | 12.7 | 1,139 |
| 7-9 | 11.1 | 630 |
| 10-15 | 10.4 | 400 |
| 16-25 | 10.6 | 203 |
| 26-49 | 9.2 | 141 |
| 50-75 | 8.6 | 38 |
| 76-99 | 11.3 | 11 |
| 100 or more | 6.0 | 40 |
| Specialty Composition: | | |
| Single specialty | 12.4 | 3,859 |
| Multispecialty | 11.9 | 982 |
| Family/General Practice | 14.5 | 518 |
| All Groups | 12.5 | 5,394[a] |

[a] Includes 142 groups with unknown size. Includes 35 groups with unknown specialty composition.

Tables 6-4 and 6-5 examine the "strength" of the relationships between HMOs, PPOs, and medical group practices. Tables 6-4 and 6-5 report, respectively, the average percentage of medical group practices' annual revenue attributed to HMOs and PPOs.

Although more groups are likely to contract with PPOs than with HMOs (Table 6-1), groups generate slightly more revenue, on average, through HMOs than through PPOs (Tables 6-4 and 6-5). The average annual percentage of revenue derived from HMOs is 14.7 percent, and the average annual percentage of revenue derived from PPOs is 12.5 percent. The Medical Economics Continuing Survey of office-based physicians reported that HMOs accounted for 13 to 15 percent of participating physicians' gross income, and PPOs accounted for 9 to 12 percent (Norman 1990).

While larger groups generate a greater percentage of annual revenue from HMOs than smaller groups do, smaller groups generate a larger percentage of annual revenue from PPOs than larger groups do. Multispecialty and family/general practice groups generate a greater average percentage of annual revenue from HMOs than PPOs, but single specialty groups generate equivalent average percentages of annual revenue from each source.

Although the data are not shown, among multispecialty groups the average percentage of annual revenue derived from HMOs increases with size and the average percentage of annual revenue derived from PPOs decreases with size. Among family/general practice groups, the average annual percentage of revenue derived from HMOs or PPOs does not vary much by size. Among single specialty groups, the average percentage of annual revenue derived from either HMOs or PPOs decreases as size increases.

## Hospital Relationship

Medical group practices relate to hospitals in a variety of ways. Groups may be owned by hospitals, or groups may contract with hospitals to service hospital departments. Table 6-6 reports the variety of primary hospital affiliations reported by groups. Overwhelmingly, the most common hospital relationship reported by groups is that their physicians have hospital privileges. Very few groups report no hospital relationship.

**TABLE 6-6**
**Distribution of Groups by Primary Hospital Affiliation**

| Hospital Affiliation | % | N |
|---|---|---|
| Hospital and group owned by same entity | 1.0 | 95 |
| Hospital owns and operates group | 1.1 | 105 |
| Hospital associated (hospital and group share fiscal accountability for the group) | 3.5 | 345 |
| Hospital is landlord | 9.7 | 964 |
| Group physicians have hospital privileges | 73.4 | 7,253 |
| Group has contract to provide services | 6.2 | 612 |
| Other affiliation | 2.3 | 232 |
| No affiliation | 2.8 | 282 |
| Total | 100.0 | 9,888[a] |

[a] Excludes 856 long-form respondents for whom primary hospital affiliation is unknown.

**TABLE 6-7**
**Distribution of Groups by Primary Hospital Affiliation and Group Size**

| | Size | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hospital | 3 | | 4 | | 5-6 | | 7-9 | | 10-15 | | 16-25 | | 26-49 | | 50-75 | | 76-99 | | 100 or more | |
| Affiliation | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N |
| Hospital and group owned by same entity | 0.2 | 7 | 0.1 | 3 | 0.7 | 15 | 0.7 | 8 | 2.4 | 17 | 4.0 | 15 | 2.1 | 5 | 4.9 | 4 | 8.0 | 2 | 17.8 | 13 |
| Hospital owns and operates group | 0.7 | 19 | 0.8 | 18 | 0.8 | 17 | 1.3 | 14 | 1.6 | 11 | 3.5 | 13 | 1.7 | 4 | 2.4 | 2 | 0.0 | 0 | 4.1 | 3 |
| Hospital associated | 1.8 | 51 | 2.6 | 57 | 3.7 | 76 | 4.5 | 49 | 7.2 | 51 | 5.4 | 20 | 6.3 | 15 | 1.2 | 1 | 8.0 | 2 | 12.3 | 9 |
| Hospital is landlord | 8.0 | 222 | 8.4 | 184 | 10.5 | 216 | 12.4 | 134 | 11.4 | 81 | 9.4 | 35 | 16.0 | 38 | 7.3 | 6 | 12.0 | 3 | 17.8 | 13 |
| Hospital privileges | 81.3 | 2,263 | 79.2 | 1,740 | 72.2 | 1,487 | 65.4 | 710 | 58.4 | 414 | 62.3 | 233 | 59.9 | 142 | 68.3 | 56 | 56.0 | 14 | 34.2 | 25 |
| Group provides services | 3.6 | 99 | 3.9 | 85 | 7.3 | 151 | 10.0 | 109 | 12.6 | 89 | 9.6 | 36 | 6.8 | 16 | 7.3 | 6 | 8.0 | 2 | 1.4 | 1 |
| Other affiliation | 1.3 | 37 | 1.6 | 34 | 2.4 | 50 | 3.2 | 35 | 4.0 | 28 | 5.1 | 19 | 3.4 | 8 | 4.9 | 4 | 8.0 | 2 | 12.3 | 9 |
| No affiliation | 3.1 | 87 | 3.4 | 75 | 2.3 | 48 | 2.4 | 26 | 2.5 | 18 | 0.8 | 3 | 3.8 | 9 | 3.7 | 3 | 0.0 | 0 | 0.0 | 0 |
| Total | 100.0 | 2,785 | 100.0 | 2,196 | 99.9[a] | 2,060 | 99.9[a] | 1,085 | 100.1[a] | 709 | 100.1[a] | 374 | 100.0 | 237 | 100.0 | 82 | 100.0 | 25 | 99.9[a] | 73 |

[a] Percentages do not sum to 100 due to rounding.

**TABLE 6-8**
**Distribution of Groups by Primary Hospital Affiliation and Specialty Composition**

| Hospital Affiliation[a] | Specialty Composition: Single Specialty % | Single Specialty N | Multispecialty % | Multispecialty N | Family/General Practice % | Family/General Practice N | Total % | Total N |
|---|---|---|---|---|---|---|---|---|
| Hospital and group owned by same entity | 0.5 | 35 | 2.4 | 47 | 1.2 | 12 | 1.0 | 94 |
| Hospital owns and operates group | 0.6 | 42 | 1.6 | 31 | 3.0 | 29 | 1.0 | 102 |
| Hospital associated | 3.7 | 258 | 2.8 | 55 | 2.6 | 25 | 3.4 | 338 |
| Hospital is landlord | 10.5 | 727 | 8.6 | 167 | 6.2 | 61 | 9.7 | 955 |
| Hospital privileges | 71.2 | 4,919 | 77.6 | 1,510 | 81.0 | 791 | 73.5 | 7 220 |
| Group provides services | 8.2 | 568 | 1.9 | 37 | 0.4 | 4 | 6.2 | 609 |
| Other affiliation | 2.6 | 183 | 1.8 | 35 | 1.4 | 14 | 2.4 | 232 |
| No affiliation | 2.5 | 175 | 3.2 | 63 | 4.1 | 40 | 2.8 | 278 |
| Total | 99.8[b] | 6,907 | 99.9[b] | 1,945 | 99.9[b] | 976 | 100.0 | 9,828[c] |

[a] $\chi^2 = 328.1$, df = 14, p < .01.
[b] Percentages do not sum to 100 due to rounding.
[c] Excludes 916 long-form respondents for whom hospital affiliation or specialty composition is unknown.

Primary hospital affiliation varies to some extent by group size and specialty composition. As size of the group increases, groups are less likely to report hospital privileges as their primary hospital affiliation and more likely to report other types of affiliations, such as the hospital and group being owned by the same entity (Table 6-7). Regarding specialty composition, single specialty groups are slightly more likely than multispecialty or family/general practice groups to report that the hospital is a landlord or that the group has a contract to provide services to the hospital (Table 6-8). This observation is consistent with the data reported in Chapter 3 that group physicians with hospital-based specialties, such as anesthesiology or radiology, are more likely to be found in single specialty groups.

## Medicare

Virtually all groups serve Medicare patients. Excluding groups specializing in pediatrics, 98.7 percent (N=9,868) of all groups report serving Medicare patients. An average of 31.1 percent of medical groups' annual revenue is generated through Medicare patients (Table 6-9).

Average revenue derived from Medicare patients varies by size and specialty composition (Table 6-9). Smaller groups, on average, generate more of their revenue through serving Medicare patients than do larger groups. Single specialty and multispecialty groups, on average, generate more of their revenue through serving Medicare patients than do family/general practice groups.

Although practically all groups treat Medicare patients, not all groups have signed participation contracts.

**TABLE 6-9**
**Mean Percentage of Groups' Annual Revenue Generated through Medicare by Selected Characteristics**

| Characteristics | Average % Revenue | Total N |
|---|---|---|
| Group Size: | | |
| 3 | 33.8 | 2,507 |
| 4 | 32.6 | 1,919 |
| 5-6 | 31.2 | 1,839 |
| 7-9 | 30.0 | 1,034 |
| 10-15 | 26.6 | 696 |
| 16-25 | 24.2 | 347 |
| 26-49 | 24.3 | 232 |
| 50-75 | 22.4 | 77 |
| 76-99 | 24.1 | 23 |
| 100 or more | 24.1 | 60 |
| Specialty Composition: | | |
| Single specialty | 32.5 | 6,060 |
| Multispecialty | 30.3 | 1,902 |
| Family/General Practice | 24.0 | 947 |
| All Groups | 31.1 | 8,957[a] |

[a] Excludes 690 long-form respondents specializing in pediatrics and excludes 1,097 long-form respondents in nonpediatric specialties for whom Medicare revenue is unknown. Includes 223 groups with unknown size. Includes 48 groups with unknown specialty composition.

Groups that have signed participation contracts have agreed to accept assignment on all claims for Medicare patients. Accepting assignment means that the group accepts Medicare's allowed charge as full payment and does not balance bill the patient. Physicians may accept assignment, however, without signing participation contracts. Only 48.3 percent (N=9,466) of the groups serving Medicare patients have signed participation contracts. These data are consistent with data from the AMA's Socioeconomic Monitoring System Survey, which reported that in 1988, 55 percent of nonfederal patient-care physicians signed participation agreements (AMA Center for Health Policy Research 1989).

Signing a participation contract varies by group size (Table 6-10) and specialty composition (Table 6-11). Larger groups are more likely than smaller groups to have signed participation contracts. Single specialty and multispecialty groups are more likely than family/general practice groups to have signed Medicare participation contracts.

The data in Tables 6-9 and 6-10 imply that a signed participation contract is associated with a smaller average annual percentage of revenue derived from Medicare patients. Greater percentages of larger groups than smaller groups report signed participation contracts, and larger groups report smaller average percentages of annual revenue derived from Medicare than do smaller groups. A group with more of its revenue derived from Medicare may be reluctant to sign a participation contract because of the potential revenue lost by not balance billing.

When the relationship between percentage of annual revenue and a signed participation contract was examined controlling for size, it was found that this pattern held only for larger groups. Among groups with 16 or more physicians, the percentage of annual revenue derived from Medicare patients was negatively related to a signed participation contract (Pearson's $r=-.09795$, $p<.01$, $N=728$). Among groups with less than 16 physicians, the opposite relation was found: the greater the group's percentage of annual revenue derived from Medicare patients, the more likely a participation contract was signed (Pearson's $r=.03845$, $p<.01$, $N=8,151$). Perhaps it is more important for smaller groups to generate a predictable flow of revenue from Medicare patients. Also, smaller groups may not have the staff resources or financial systems to handle the extra paper work involved in balance billing, and hence, may be more willing to settle for the Medicare payment.

**TABLE 6-10**
**Percentage of Groups with a Signed Medicare Participation Contract by Group Size**

| Size[a] | % with Signed Participation Contract | Total N |
|---|---|---|
| 3 | 43.9 | 2,658 |
| 4 | 45.1 | 2,030 |
| 5-6 | 50.2 | 1,945 |
| 7-9 | 53.6 | 1,091 |
| 10-15 | 54.6 | 722 |
| 16-25 | 53.2 | 374 |
| 26-49 | 47.9 | 236 |
| 50-75 | 48.7 | 78 |
| 76-99 | 68.2 | 22 |
| 100 or more | 65.2 | 69 |
| Total | 48.2 | 9,225[b] |

[a] $\chi^2 = 70.6$, df = 9, $p < .01$.
[b] Excludes 690 long-form respondents specializing in pediatrics and 829 long-form respondents in nonpediatric specialties for whom size or existence of a participation contract is unknown.

**TABLE 6-11**
**Percentage of Groups with a Signed Medicare Participation Contract by Specialty Composition**

| Specialty Composition[a] | % with Signed Participation Contract | Total N |
|---|---|---|
| Single specialty | 50.5 | 6,440 |
| Multispecialty | 47.8 | 1,976 |
| Family/General Practice | 34.1 | 995 |
| Total | 48.2 | 9,411[b] |

[a] $\chi^2 = 93.5$, df = 2, $p < .01$.
[b] Excludes 690 long-form respondents specializing in pediatrics and excludes 643 long-form respondents in nonpediatric specialties for whom specialty composition or existence of a participation contract is unknown.

## Summary

In the process of delivering medical care, medical group practices must interact with HMOs, PPOs, hospitals, and the Medicare program. Regarding relationships with managed care plans, more than half of all groups are likely to contract with HMOs and PPOs, and these contracts represent, on average, 14 percent and 12 percent, respectively, of groups' annual revenue. Regarding hospital relationships, virtually all groups are related to a hospital in some way, with nearly three quarters of all groups reporting hospital privileges as their primary hospital affiliation. Regarding Medicare, virtually all groups treat Medicare patients, with these patients representing an average of 31 percent of groups' annual revenue.

Clearly, medical group practices must contend with a complex and demanding medical environment. Groups, and the physicians in them, can no longer be solely concerned about managing patient relationships, but must also be concerned about managing relationships with HMOs, PPOs, hospitals and Medicare.

However, despite the significant percentages of groups related to HMOs and PPOs, the data presented in this report have suggested that so far, the effect of HMOs and PPOs on how groups practice may be minimal. Although managed care plans may use computers to track patterns of service and monitor associated costs, Chapter 4 indicated that most medical group practices do not use computers for various applications. Thus groups may not be tracking their own services or monitoring their own costs, but rather managed care plans may be maintaining these data on their affiliated

providers. Although managed care contracts may involve formularies, Chapter 5 reported that very few groups require their physicians to prescribe according to one.

## References

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*Chapter 7*

# Geographic Distribution

Medical group practices are distributed throughout the United States. This chapter focuses on the distribution of groups across states and census divisions. This chapter also examines selected characteristics of groups that are likely to differ across states or census divisions. Specifically, the geographic variation in medical groups' size, specialty composition, HMO relationships, PPO relationships, and involvement in Medicare will be examined.

## Distribution and Group Size

Table 7-1 reports the number of groups and group physician positions in each census division and state. Two states, California and Pennsylvania, have over 1,000 groups. The states with the fewest groups are Utah, Wyoming, North Dakota, Delaware, and Vermont. The number of groups in each state is directly correlated with the number of group physician positions (Pearson's $r = .87138$, $p < .01$, $N = .51$). Although the data are not shown, the number of groups in each state is also directly correlated with the number of physicians in the state (Pearson's $r = .94727$, $p < .01$, $N = .51$), as well as the size of the general population (Pearson's $r = .97436$, $p < .01$, $N = .51$). The South Atlantic and the East North Central census divisions are those divisions with the greatest numbers of groups.

Table 7-2 reports the number of group physician positions as a percentage of the total number of nonfederal physicians for each state and census division. The states with the greatest numbers of groups or group physician positions are not the states in which group physicians represent the greatest percentages of nonfederal physicians. The greatest percentages of nonfederal physicians who are in groups can be found in Minnesota, North Dakota, and Wisconsin. In these three states, it is estimated that over 55 percent of nonfederal physicians are in groups.

Table 7-3 reports the mean group size and the median group size by census division and state. States with the most groups do not necessarily have the largest groups. For example, the mean group size in California is 15.4, but the mean group size in Pennsylvania is only 7.6. North Dakota has the largest groups, as indicated by either the mean or median. With respect to census divisions, the largest groups, on average, can be found in the Pacific states.

## Distribution and Specialty Composition

Table 7-4 shows that the specialty composition of groups varies by census division. The New England census division has the greatest percentage of single specialty groups and the smallest percentage of multispecialty groups. Conversely, the West North Central census division has the smallest percentage of single specialty groups and the largest percentage of multispecialty groups.

Single specialty groups comprise more than 70 percent of the groups in the census divisions along the Atlantic seaboard and in the South, but less than 70 percent of the groups in the Western and North Central states. This pattern suggests that there are geographic differences in practice style.

## Distribution and Relationships to HMOs and PPOs

The evolution of HMOs and PPOs has differed by state. According to Interstudy (1988), the states with

**TABLE 7-1**
**Distribution of Groups and Group Physician Positions by Census Division and State**

| Census Division / State | Groups % | Groups N | Physician Positions % | Physician Positions N |
|---|---|---|---|---|
| Middle Atlantic | 15.0 | 2,491 | 12.4 | 19,229 |
| New Jersey | 2.9 | 486 | 1.9 | 2,943 |
| New York | 6.0 | 987 | 5.6 | 8,680 |
| Pennsylvania | 6.1 | 1,018 | 4.9 | 7,606 |
| New England | 5.9 | 985 | 5.3 | 8,316 |
| Connecticut | 1.7 | 286 | 1.1 | 1,655 |
| Maine | 0.5 | 82 | 0.3 | 420 |
| Massachusetts | 2.7 | 442 | 3.0 | 4,600 |
| New Hampshire | 0.5 | 75 | 0.4 | 686 |
| Rhode Island | 0.4 | 60 | 0.3 | 440 |
| Vermont | 0.2 | 40 | 0.3 | 515 |
| East North Central | 17.3 | 2,872 | 18.5 | 28,794 |
| Illinois | 4.7 | 778 | 4.8 | 7,396 |
| Indiana | 2.2 | 364 | 1.8 | 2,749 |
| Michigan | 3.5 | 585 | 4.6 | 7,090 |
| Ohio | 4.4 | 736 | 4.1 | 6,329 |
| Wisconsin | 2.5 | 409 | 3.4 | 5,230 |
| West North Central | 8.8 | 1,459 | 9.4 | 14,682 |
| Iowa | 1.4 | 239 | 1.0 | 1,608 |
| Kansas | 1.2 | 191 | 1.0 | 1,509 |
| Minnesota | 2.5 | 420 | 4.0 | 6,256 |
| Missouri | 2.2 | 359 | 1.8 | 2,846 |
| Nebraska | 1.0 | 163 | 0.8 | 1,197 |
| North Dakota | 0.2 | 35 | 0.5 | 752 |
| South Dakota | 0.3 | 52 | 0.3 | 514 |
| East South Central | 6.3 | 1,039 | 6.3 | 9,821 |
| Alabama | 1.5 | 250 | 1.5 | 2,314 |
| Kentucky | 1.5 | 247 | 1.5 | 2,296 |
| Mississippi | 0.9 | 152 | 0.6 | 867 |
| Tennessee | 2.4 | 390 | 2.8 | 4,344 |
| South Atlantic | 18.2 | 3,025 | 15.2 | 23,629 |
| Delaware | 0.2 | 38 | 0.1 | 215 |
| District of Columbia | 0.4 | 60 | 0.4 | 579 |
| Florida | 4.9 | 814 | 4.1 | 6,408 |
| Georgia | 2.4 | 396 | 1.8 | 2,869 |
| Maryland | 2.1 | 343 | 2.1 | 3,332 |
| North Carolina | 3.2 | 532 | 2.2 | 3,441 |
| South Carolina | 1.6 | 258 | 1.1 | 1,783 |
| Virginia | 3.0 | 496 | 2.6 | 4,116 |
| West Virginia | 0.5 | 88 | 0.6 | 886 |
| West South Central | 8.5 | 1,401 | 7.4 | 11,477 |
| Arkansas | 0.9 | 145 | 0.6 | 860 |
| Louisiana | 1.8 | 294 | 1.4 | 2,132 |
| Oklahoma | 1.0 | 163 | 0.8 | 1,257 |
| Texas | 4.8 | 799 | 4.6 | 7,228 |
| Mountain | 5.7 | 939 | 4.9 | 7,648 |
| Arizona | 1.5 | 243 | 1.7 | 2,653 |
| Colorado | 1.7 | 278 | 1.3 | 1,994 |
| Idaho | 0.5 | 78 | 0.3 | 414 |
| Montana | 0.3 | 55 | 0.3 | 418 |
| Nevada | 0.4 | 69 | 0.3 | 521 |
| New Mexico | 0.5 | 82 | 0.4 | 625 |
| Utah | 0.7 | 14 | 0.6 | 911 |
| Wyoming | 0.1 | 20 | 0.1 | 112 |
| Pacific | 14.0 | 2,321 | 20.4 | 31,762 |
| Alaska | 0.3 | 46 | 0.2 | 247 |
| California | 9.8 | 1,629 | 15.7 | 24,420 |
| Hawaii | 0.3 | 47 | 0.5 | 718 |
| Oregon | 1.4 | 226 | 1.0 | 1,536 |
| Washington | 2.2 | 373 | 3.1 | 4,841 |
| Possessions | 0.3 | 47 | 0.2 | 270 |
| Total | 100.0[a] | 16,579 | 100.0[a] | 155,628 |

[a] State percentages do not sum to 100 due to rounding. State percentages do not sum to Census Division percentages due to rounding.

**TABLE 7-2**
**Group Physician Positions as a Percentage of Total Nonfederal Physicians by Census Division and State**

| Census Division / State | % | Number of Physician Positions | Number of Nonfederal Physicians[a] |
|---|---|---|---|
| Middle Atlantic | 17.9 | 19,229 | 107,657 |
| New Jersey | 15.2 | 2,943 | 19,410 |
| New York | 14.7 | 8,680 | 58,916 |
| Pennsylvania | 25.9 | 7,606 | 29,331 |
| New England | 21.3 | 8,316 | 39,099 |
| Connecticut | 16.3 | 1,655 | 10,153 |
| Maine | 17.7 | 420 | 2,367 |
| Massachusetts | 22.8 | 4,600 | 20,224 |
| New Hampshire | 30.6 | 686 | 2,241 |
| Rhode Island | 16.9 | 440 | 2,602 |
| Vermont | 34.1 | 515 | 1,512 |
| East North Central | 34.0 | 28,794 | 84,675 |
| Illinois | 28.5 | 7,396 | 25,971 |
| Indiana | 30.4 | 2,749 | 9,029 |
| Michigan | 39.4 | 7,090 | 17,972 |
| Ohio | 28.5 | 6,329 | 22,212 |
| Wisconsin | 55.1 | 5,230 | 9,491 |
| West North Central | 42.8 | 14,682 | 34,277 |
| Iowa | 35.9 | 1,608 | 4,474 |
| Kansas | 33.0 | 1,509 | 4,575 |
| Minnesota | 63.5 | 6,256 | 9,849 |
| Missouri | 27.7 | 2,846 | 10,290 |
| Nebraska | 42.2 | 1,197 | 2,839 |
| North Dakota | 63.5 | 752 | 1,184 |
| South Dakota | 48.2 | 514 | 1,066 |
| East South Central | 37.6 | 9,821 | 26,124 |
| Alabama | 35.2 | 2,314 | 6,580 |
| Kentucky | 35.9 | 2,296 | 6,388 |
| Mississippi | 24.6 | 867 | 3,522 |
| Tennessee | 45.1 | 4,344 | 9,634 |
| South Atlantic | 24.8 | 23,629 | 95,139 |
| Delaware | 16.0 | 215 | 1,348 |
| District of Columbia | 15.0 | 579 | 3,869 |
| Florida | 22.0 | 6,408 | 29,087 |
| Georgia | 26.1 | 2,869 | 10,986 |
| Maryland | 21.3 | 3,332 | 15,643 |
| North Carolina | 27.9 | 3,441 | 12,330 |
| South Carolina | 31.1 | 1,783 | 5,736 |
| Virginia | 32.3 | 4,116 | 12,744 |
| West Virginia | 26.1 | 886 | 3,396 |
| West South Central | 24.2 | 11,477 | 47,455 |
| Arkansas | 23.0 | 860 | 3,746 |
| Louisiana | 24.8 | 2,132 | 8,602 |
| Oklahoma | 24.9 | 1,257 | 5,055 |
| Texas | 24.0 | 7,228 | 30,052 |
| Mountain | 29.3 | 7,648 | 26,084 |
| Arizona | 34.8 | 2,653 | 7,632 |
| Colorado | 27.6 | 1,994 | 7,214 |
| Idaho | 30.5 | 414 | 1,358 |
| Montana | 30.8 | 418 | 1,359 |
| Nevada | 30.2 | 521 | 1,726 |
| New Mexico | 21.8 | 625 | 2,869 |
| Utah | 28.4 | 911 | 3,207 |
| Wyoming | 15.6 | 112 | 719 |
| Pacific | 33.9 | 31,762 | 93,645 |
| Alaska | 33.9 | 247 | 729 |
| California | 33.1 | 24,420 | 73,832 |
| Hawaii | 27.7 | 718 | 2,593 |
| Oregon | 25.4 | 1,536 | 6,049 |
| Washington | 46.4 | 4,841 | 10,442 |
| Possessions | 4.0 | 270 | 6,833 |
| Total | 30.3 | 155,628 | 512,946[b] |

[a] Source: AMA Physician Masterfile, January 1988, Department of Physician Data Services, Division of Survey and Data Resources.

[b] Total excludes physicians who are inactive and physicians whose addresses are unknown. State figures include inactive physicians.

**TABLE 7-3**
**Mean Group Size and Median Group Size by Census Division and State**

| Census Division / State | Mean Size | Median Size | N |
|---|---|---|---|
| Middle Atlantic | 7.9 | 4.0 | 2,442 |
| New Jersey | 6.2 | 4.0 | 474 |
| New York | 8.9 | 4.0 | 970 |
| Pennsylvania | 7.6 | 4.0 | 998 |
| New England | 8.6 | 4.0 | 965 |
| Connecticut | 6.0 | 4.0 | 278 |
| Maine | 5.2 | 4.0 | 81 |
| Massachusetts | 10.6 | 5.0 | 435 |
| New Hampshire | 9.5 | 4.0 | 72 |
| Rhode Island | 7.4 | 4.0 | 59 |
| Vermont | 12.9 | 5.0 | 40 |
| East North Central | 10.2 | 5.0 | 2,817 |
| Illinois | 9.6 | 4.0 | 771 |
| Indiana | 7.6 | 5.0 | 359 |
| Michigan | 12.6 | 5.0 | 564 |
| Ohio | 8.7 | 5.0 | 727 |
| Wisconsin | 13.2 | 5.0 | 396 |
| West North Central | 10.3 | 5.0 | 1,428 |
| Iowa | 6.8 | 4.0 | 238 |
| Kansas | 8.0 | 5.0 | 188 |
| Minnesota | 15.4 | 6.0 | 406 |
| Missouri | 8.0 | 4.0 | 356 |
| Nebraska | 7.6 | 4.0 | 157 |
| North Dakota | 23.5 | 7.5 | 32 |
| South Dakota | 10.1 | 6.0 | 51 |
| East South Central | 9.6 | 4.0 | 1,025 |
| Alabama | 9.3 | 4.0 | 248 |
| Kentucky | 9.4 | 4.0 | 244 |
| Mississippi | 5.8 | 4.0 | 148 |
| Tennessee | 11.3 | 5.0 | 385 |
| South Atlantic | 8.0 | 4.0 | 2,970 |
| Delaware | 6.0 | 4.5 | 36 |
| District of Columbia | 10.2 | 5.0 | 57 |
| Florida | 8.0 | 4.0 | 804 |
| Georgia | 7.4 | 4.0 | 389 |
| Maryland | 9.9 | 5.0 | 335 |
| North Carolina | 6.6 | 4.0 | 520 |
| South Carolina | 7.0 | 4.0 | 253 |
| Virginia | 8.4 | 4.0 | 490 |
| West Virginia | 10.3 | 5.0 | 86 |
| West South Central | 8.4 | 4.0 | 1,358 |
| Arkansas | 6.1 | 4.0 | 140 |
| Louisiana | 7.5 | 4.0 | 283 |
| Oklahoma | 8.0 | 5.0 | 156 |
| Texas | 9.3 | 4.0 | 779 |
| Mountain | 8.3 | 4.0 | 919 |
| Arizona | 11.2 | 4.5 | 236 |
| Colorado | 7.3 | 4.0 | 273 |
| Idaho | 5.4 | 4.0 | 76 |
| Montana | 7.6 | 4.0 | 55 |
| Nevada | 7.6 | 5.0 | 69 |
| New Mexico | 7.7 | 4.0 | 81 |
| Utah | 8.3 | 5.0 | 110 |
| Wyoming | 5.9 | 4.0 | 19 |
| Pacific | 14.0 | 5.0 | 2,271 |
| Alaska | 5.6 | 4.0 | 44 |
| California | 15.4 | 5.0 | 1,589 |
| Hawaii | 15.6 | 6.0 | 46 |
| Oregon | 6.8 | 4.0 | 224 |
| Washington | 13.2 | 5.0 | 368 |
| Possessions | 5.9 | 4.0 | 46 |
| Total | 9.6 | 4.0 | 16,241[a] |

[a] Excludes 388 groups with unknown size.

the greatest number of HMOs and the largest HMO enrollments include California, Ohio, Florida, Texas, New York, Illinois, and Wisconsin. Similarly, according to the American Medical Care and Review Association (Division of Health Programs 1988), the states with the greatest number of PPOs include California, Ohio, Florida, Illinois, Pennsylvania, and Colorado. One would expect that the number of HMOs and PPOs in a state would be related to the level of involvement of group practices with such health plans in that state.

Table 7-5 reports the number of HMOs in each state, the percentage of groups in each state related in some way to an HMO (group is organized to provide services to an HMO, group has a contract with one or more HMOs to provide services, or group does business with one or more HMOs on a referral basis but has no formal contract), and the average percentage of group revenue generated through HMOs in each state. For example, nine HMOs were operating in Alabama in 1988. Of the 146 groups in Alabama that responded to the question on HMO relationships, 56.8 percent reported relationships with an HMO. Of the 83 groups that reported relationships with an HMO, 70 reported the percentage of their revenue derived from HMOs. These 70 groups received an average of 12.2 percent of their revenue from HMOs.

There is considerable variation in the percentage of groups in each state that maintain relationships with HMOs. Minnesota has the greatest percentage of groups with an HMO relationship, 92.0 percent, and Alaska, with no HMOs, of course has the smallest, zero percent. In only ten states is the percentage of groups that do business with an HMO less than 50 percent: Alaska, Arkansas, Idaho, Maine, Mississippi, Montana, Vermont, Virginia, West Virginia, and Wyoming. The U.S. Possessions also fall into this group. Thus, in about 80 percent of the states, at least half of the medical groups maintain relationships with HMOs.

Clearly, most groups in most states are related to HMOs, and this tendency is significantly and directly correlated with the number of HMOs in the state (see Table 7-5, note b). In other words, the greater the number of HMOs in the state, the greater the percentage of groups that are related to HMOs.

There is also some variation in the percentage of group revenue generated through HMOs, averaged for the state. The average percentage of group revenue from HMOs is highest in West Virginia, 36.2 percent, and lowest in Mississippi, less than 1 percent. Interestingly, both West Virginia and Mississippi are among the

**TABLE 7-4**
**Distribution of Groups by Specialty Composition and Census Division**

| Census Division | Specialty Composition | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Single Specialty | | Multi-specialty | | Family/General Practice | | Total | |
| | % | N | % | N | % | N | % | N |
| New England | 79.8 | 783 | 15.5 | 152 | 4.7 | 46 | 100.0 | 981 |
| Mid-Atlantic | 77.7 | 1,923 | 16.5 | 408 | 5.8 | 144 | 100.0 | 2,475 |
| E N Central | 67.5 | 1,926 | 22.3 | 637 | 10.2 | 292 | 100.0 | 2,855 |
| W N Central | 58.0 | 842 | 23.9 | 347 | 18.1 | 262 | 100.0 | 1,451 |
| S Atlantic | 76.0 | 2,293 | 15.6 | 470 | 8.4 | 252 | 100.0 | 3,015 |
| E S Central | 72.8 | 754 | 18.2 | 188 | 9.1 | 94 | 100.1[a] | 1,036 |
| W S Central | 71.6 | 994 | 17.6 | 245 | 10.8 | 150 | 100.0 | 1,389 |
| Mountain | 67.6 | 631 | 19.6 | 183 | 12.8 | 120 | 100.0 | 934 |
| Pacific | 66.0 | 1,526 | 22.9 | 530 | 11.1 | 256 | 100.0 | 2,312 |
| Possessions | 78.7 | 37 | 17.0 | 8 | 4.3 | 2 | 100.0 | 47 |

[a] Percentages do not sum to 100 due to rounding.

states in which fewer than 50 percent of their groups are related to an HMO. Although the average percentage of HMO revenue tends to be directly correlated with the proportion of groups in a state that are related to an HMO, the correlation is not statistically significant (see Table 7-5, note c).

Table 7-6 reports the number of PPOs in each state, the percentage of groups in each state with PPO contracts, and the groups' percentage of revenue generated through PPO contracts, averaged for the state. For example, in 1988 eight PPOs were operating in Alabama. Of the 158 groups in Alabama that responded to the question on PPO contracts, 77.8 percent reported having PPO contracts. Of the 123 groups in Alabama that reported PPO contracts, 110 groups reported their revenue from those contracts. The percentage of PPO revenue, averaged for the state, is 24.3 percent.

There is considerable variation across states in the percentage of groups with PPO contracts. The greatest percentage of groups with PPO contracts can be found in Tennessee, 83.1 percent, and the smallest percentage of groups with PPO contracts can be found in Alaska, zero percent. The number of groups with PPO contracts directly correlates with the number of PPOs in a state (See Table 7-6, note b). That is, the greater the number of PPOs, the greater the proportion of groups with a PPO contract.

There is some variation in the average percentage of revenue that medical groups derive from PPO contracts. Medical groups in Delaware derive the most percentage of revenue, on average, from PPO contracts (30.7 percent), whereas groups in South Dakota derive the least (3.9 percent). The proportion of groups with PPO contracts is not significantly correlated with the average percentage of revenue derived from PPO contracts (See Table 7-6, note c).

## Distribution and Medicare

Table 7-7 reports the percentage of groups in each state, excluding single specialty pediatric groups, that serve Medicare patients; the percentage of annual revenue generated by Medicare patients, averaged for the state; and the percentage of groups in each state that have signed a participation contract. Groups that have signed participation contracts have agreed to accept assignment on all claims for Medicare patients. Accepting assignment means that the group accepts third-party payment as full payment and does not balance bill the patient. Physicians may accept assignment, however, without signing participation contracts.

Table 7-7 clearly shows that virtually all groups, regardless of the state in which they are located, treat Medicare patients. The state mean percentage of groups' annual revenue generated through Medicare patients does not vary much either. Medicare patients represent the smallest percentage of revenue for groups in Alaska and the greatest percentage of revenue for groups in Florida. The percentage of revenue generated from Medicare is related to the percentage of elderly in the state. Alaska has the smallest percentage of population 65 years of age and over, and Florida has the greatest percentage (U.S. Bureau of the Census 1987). For groups in virtually all states, Medicare patients represent, on average, between one-quarter and one-third of a group's annual income.

The percentage of groups in each state that have signed participation contracts, however, varies considerably. The percentage of groups that participate is smallest in South Dakota (8.3 percent) and largest in Massachusetts (95.8 percent). One reason for the high participation rate in Massachusetts is the state's mandatory assignment law. According to this law, physicians must

**TABLE 7-5**
**Number of HMOs, Percentage of Groups Related to an HMO, and the Mean Percentage of Annual Revenue Generated through HMOs by State**

| State | Number of HMOs[a] | % Groups with HMO Relationship[b] % | Total N | Mean % HMO Revenue[c] % | Total N |
|---|---|---|---|---|---|
| Alabama | 9 | 56.8 | 146 | 12.2 | 70 |
| Alaska | 0 | 0.0 | 31 | — | 0 |
| Arizona | 18 | 74.4 | 141 | 16.9 | 90 |
| Arkansas | 6 | 41.9 | 93 | 8.9 | 32 |
| California | 51 | 69.6 | 956 | 17.2 | 576 |
| Colorado | 20 | 84.4 | 173 | 19.5 | 133 |
| Connecticut | 13 | 83.6 | 177 | 17.2 | 127 |
| Delaware | 6 | 89.6 | 29 | 12.8 | 23 |
| District of Columbia | 3 | 64.9 | 37 | 13.2 | 18 |
| Florida | 37 | 62.7 | 467 | 14.2 | 252 |
| Georgia | 12 | 51.2 | 248 | 11.5 | 106 |
| Hawaii | 5 | 80.0 | 25 | 16.9 | 18 |
| Idaho | 2 | 31.9 | 47 | 3.1 | 12 |
| Illinois | 32 | 78.7 | 461 | 15.8 | 319 |
| Indiana | 12 | 77.6 | 232 | 13.0 | 138 |
| Iowa | 11 | 67.5 | 166 | 11.5 | 103 |
| Kansas | 14 | 76.7 | 133 | 14.9 | 87 |
| Kentucky | 7 | 66.9 | 154 | 10.1 | 84 |
| Louisiana | 10 | 63.5 | 167 | 11.7 | 87 |
| Maine | 3 | 37.2 | 43 | 3.1 | 9 |
| Maryland | 12 | 76.2 | 219 | 13.8 | 149 |
| Massachusetts | 19 | 89.5 | 267 | 17.4 | 198 |
| Michigan | 20 | 78.0 | 350 | 17.0 | 224 |
| Minnesota | 10 | 92.0 | 264 | 30.0 | 212 |
| Mississippi | 1 | 30.8 | 91 | 0.8 | 22 |
| Missouri | 18 | 55.0 | 238 | 12.8 | 112 |
| Montana | 1 | 20.0 | 40 | 4.4 | 7 |
| Nebraska | 6 | 57.8 | 116 | 9.1 | 58 |
| Nevada | 4 | 78.4 | 37 | 19.0 | 24 |
| New Hampshire | 3 | 80.8 | 47 | 8.3 | 28 |
| New Jersey | 17 | 67.2 | 287 | 12.3 | 169 |
| New Mexico | 5 | 55.2 | 58 | 17.9 | 30 |
| New York | 34 | 54.4 | 601 | 19.2 | 270 |
| North Carolina | 12 | 60.8 | 367 | 10.7 | 192 |
| North Dakota | 5 | 82.6 | 23 | 13.8 | 17 |
| Ohio | 40 | 79.1 | 422 | 13.3 | 273 |
| Oklahoma | 8 | 56.8 | 95 | 17.4 | 49 |
| Oregon | 11 | 77.3 | 163 | 14.6 | 103 |
| Pennsylvania | 23 | 72.2 | 650 | 10.6 | 401 |
| Rhode Island | 4 | 86.1 | 36 | 14.1 | 28 |
| South Carolina | 6 | 77.2 | 149 | 9.3 | 91 |
| South Dakota | 1 | 77.8 | 36 | 4.2 | 22 |
| Tennessee | 9 | 63.5 | 219 | 8.7 | 112 |
| Texas | 35 | 56.0 | 493 | 11.9 | 240 |
| Utah | 7 | 85.1 | 74 | 19.7 | 54 |
| Vermont | 1 | 40.7 | 27 | 5.0 | 7 |
| Virginia | 14 | 49.2 | 309 | 12.4 | 132 |
| Washington | 11 | 73.8 | 233 | 9.8 | 143 |
| West Virginia | 1 | 17.0 | 53 | 36.2 | 6 |
| Wisconsin | 30 | 87.2 | 257 | 19.1 | 201 |
| Wyoming | 1 | 43.8 | 16 | 7.2 | 4 |
| Possessions | 3 | 41.4 | 29 | 21.1 | 12 |

[a] Source: *The Interstudy Edge.* Excelsior, Minn.: Interstudy, Fall 1988.
[b] The correlation between the number of HMOs in each state and the proportion of groups in each state related to an HMO was measured using the Pearson correlation coefficient: r = .32, p < .05, N = 52.
[c] The correlation between the proportion of groups in each state related to an HMO and the percentage of revenue that groups derive from HMOs, averaged for the state, was measured using the Pearson correlation coefficient: r = .27, p = not significant, N = 51.

**TABLE 7-6**
**Number of PPOs, Percentage of Groups with PPO Contracts, and the Mean Percentage of Annual Revenue Generated through PPO Contracts by State**

| State | Number of PPOs[a] | % Groups with PPO Contract[b] % | Total N | Mean % PPO Revenue[c] % | Total N |
|---|---|---|---|---|---|
| Alabama | 8 | 77.8 | 158 | 24.3 | 110 |
| Alaska | 2 | 0.0 | 33 | — | 0 |
| Arizona | 27 | 74.8 | 143 | 19.0 | 100 |
| Arkansas | 4 | 49.5 | 97 | 8.4 | 44 |
| California | 98 | 81.6 | 997 | 16.9 | 759 |
| Colorado | 32 | 80.1 | 176 | 16.4 | 133 |
| Connecticut | 4 | 46.6 | 178 | 14.3 | 79 |
| Delaware | 1 | 23.3 | 30 | 30.7 | 7 |
| District of Columbia | 9 | 59.0 | 39 | 9.0 | 22 |
| Florida | 38 | 67.4 | 487 | 12.7 | 302 |
| Georgia | 18 | 41.2 | 260 | 8.7 | 100 |
| Hawaii | 2 | 44.8 | 29 | 8.8 | 11 |
| Idaho | —[d] | 10.9 | 55 | 10.2 | 6 |
| Illinois | 33 | 51.5 | 476 | 7.2 | 226 |
| Indiana | 10 | 71.0 | 241 | 10.9 | 150 |
| Iowa | 3 | 36.5 | 167 | 9.2 | 57 |
| Kansas | 9 | 59.6 | 136 | 17.3 | 67 |
| Kentucky | 9 | 42.9 | 156 | 12.4 | 65 |
| Louisiana | 12 | 57.5 | 179 | 9.3 | 91 |
| Maine | —[e] | 30.6 | 49 | 4.6 | 14 |
| Maryland | 13 | 66.5 | 221 | 8.9 | 135 |
| Massachusetts | 12 | 59.1 | 269 | 8.9 | 141 |
| Michigan | 20 | 54.9 | 350 | 11.1 | 171 |
| Minnesota | 14 | 72.4 | 268 | 17.0 | 170 |
| Mississippi | 4 | 46.1 | 102 | 4.0 | 42 |
| Missouri | 23 | 63.1 | 252 | 16.3 | 153 |
| Montana | —[f] | 2.4 | 41 | 5.0 | 1 |
| Nebraska | 3 | 48.3 | 118 | 11.3 | 54 |
| Nevada | 10 | 78.9 | 38 | 8.6 | 28 |
| New Hampshire | 1 | 31.2 | 48 | 10.0 | 14 |
| New Jersey | 5 | 31.5 | 298 | 9.7 | 85 |
| New Mexico | 7 | 42.6 | 61 | 11.0 | 24 |
| New York | 10 | 26.4 | 617 | 17.5 | 150 |
| North Carolina | 13 | 41.9 | 382 | 9.3 | 148 |
| North Dakota | 1 | 13.6 | 22 | 10.7 | 3 |
| Ohio | 46 | 81.5 | 432 | 12.5 | 322 |
| Oklahoma | 11 | 72.1 | 104 | 13.4 | 69 |
| Oregon | 13 | 56.9 | 174 | 12.6 | 91 |
| Pennsylvania | 32 | 48.6 | 650 | 7.5 | 292 |
| Rhode Island | —[g] | 42.9 | 35 | 15.8 | 15 |
| South Carolina | 5 | 52.5 | 158 | 7.5 | 80 |
| South Dakota | 1 | 23.7 | 38 | 3.9 | 8 |
| Tennessee | 21 | 83.1 | 231 | 14.4 | 170 |
| Texas | 22 | 45.4 | 518 | 7.4 | 218 |
| Utah | 7 | 80.0 | 75 | 16.8 | 53 |
| Vermont | —[h] | 16.1 | 31 | 7.0 | 5 |
| Virginia | 9 | 39.9 | 331 | 7.7 | 121 |
| Washington | 21 | 77.0 | 235 | 13.8 | 165 |
| West Virginia | 5 | 43.6 | 55 | 8.2 | 22 |
| Wisconsin | 10 | 40.6 | 261 | 9.3 | 91 |
| Wyoming | 1 | 5.9 | 17 | 30.0 | 1 |
| Possessions | 1 | 26.5 | 34 | 19.4 | 9 |

[a] Source: AMCRA, June 1988 data published in the AMA's *Physician Resource Guide to Health Care Delivery Systems, 1988.*
[b] The correlation between the number of PPOs in each state and the proportion of groups with PPO contracts in each state was measured using the Pearson correlation coefficient: r = .52, p < .01, N = 47.
[c] The correlation between the proportion of groups with PPO contracts in each state and the average percentage of revenue groups derive from PPOs was measured using the Pearson correlation coefficient: r = .13, p = not significant, N = 51.
(continued on following page)

[d] The existence of a PPO in Idaho is uncertain. Personal communication with the Bureau of Insurance indicated that although there were no PPOs in the state of Idaho, Blue Cross contracted with participating physicians.
[e] The number of PPOs in Maine is uncertain. Although AMCRA data reported none, personal communication with the Bureau of Insurance indicated that PPOs were operating in the State of Maine in 1988.
[f] The existence of a PPO in Montana is uncertain. Personal communication with the Insurance Division of the State Auditor Office indicated that Blue Cross/Blue Shield Montana maintained a list of preferred providers.
[g] The number of PPOs in Rhode Island is uncertain. Personal communication with the Insurance Division of the Department of Business Regulation indicated that Rhode Island state law does not require the licensing of PPOs. Commercial insurers may operate PPOs, but no public record exists.
[h] Personal communication with the Health Division of the Department of Banking and Insurance indicated that no PPOs operated in Vermont in 1988, but AMCRA data reported one in 1987.

accept assignment or they will be sanctioned. One possible reason that the participation rate in Massachusetts is not 100 percent is that physicians may have accepted assignment without their groups having signed participation contracts.

## Summary

Medical groups exist throughout the country. More medical groups tend to exist, however, in states with more physicians and in states with a greater general population.

The geographic distribution of HMOs and PPOs affects medical group practices. Not surprisingly, the greater the number of HMOs and PPOs in a state, the greater the percentage of groups that do business with these entities.

And finally, the percentage of groups that treat Medicare patients does not vary by state. Virtually all groups treat Medicare patients. However, the percentage of groups that have signed participation contracts differs by state, with participation ranging from 8.3 percent in South Dakota to 95.8 percent in Massachusetts.

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**TABLE 7-7**
**Percentage of Groups Serving Medicare Patients, Mean Percentage of Annual Revenue Generated through Medicare, and Percentage of Groups with Participation Contracts by State**

| State | % Serving Medicare Patients[a] | | Mean % Revenue | | % with Participation Contract | |
|---|---|---|---|---|---|---|
| | % | Total N | % | Total N | % | Total N |
| Alabama | 98.6 | 148 | 31.0 | 135 | 63.1 | 141 |
| Alaska | 93.5 | 31 | 9.9 | 25 | 51.8 | 27 |
| Arizona | 97.7 | 130 | 34.4 | 119 | 45.9 | 122 |
| Arkansas | 100.0 | 92 | 32.0 | 82 | 62.9 | 89 |
| California | 97.2 | 911 | 30.8 | 817 | 49.8 | 858 |
| Colorado | 96.4 | 166 | 25.4 | 147 | 36.1 | 158 |
| Connecticut | 99.4 | 161 | 31.4 | 148 | 51.0 | 155 |
| Delaware | 100.0 | 29 | 31.1 | 29 | 70.4 | 27 |
| District of Columbia | 97.3 | 37 | 31.0 | 33 | 54.3 | 35 |
| Florida | 97.2 | 461 | 45.2 | 422 | 47.4 | 432 |
| Georgia | 99.2 | 241 | 26.7 | 212 | 41.9 | 229 |
| Hawaii | 100.0 | 27 | 19.0 | 26 | 76.0 | 25 |
| Idaho | 100.0 | 50 | 27.2 | 48 | 16.3 | 49 |
| Illinois | 99.1 | 446 | 29.8 | 405 | 41.7 | 429 |
| Indiana | 99.6 | 231 | 31.6 | 211 | 50.4 | 228 |
| Iowa | 100.0 | 160 | 33.3 | 145 | 35.9 | 156 |
| Kansas | 99.2 | 133 | 30.5 | 119 | 72.5 | 131 |
| Kentucky | 100.0 | 137 | 32.7 | 124 | 48.1 | 135 |
| Louisiana | 99.4 | 166 | 30.4 | 151 | 47.8 | 157 |
| Maine | 100.0 | 48 | 33.5 | 42 | 73.9 | 46 |
| Maryland | 99.5 | 193 | 28.4 | 181 | 66.5 | 185 |
| Massachusetts | 100.0 | 241 | 30.5 | 220 | 95.8 | 236 |
| Michigan | 97.9 | 334 | 30.4 | 290 | 61.6 | 318 |
| Minnesota | 98.8 | 259 | 19.8 | 225 | 33.5 | 248 |
| Mississippi | 100.0 | 94 | 31.8 | 85 | 45.2 | 93 |
| Missouri | 99.2 | 241 | 33.0 | 222 | 38.2 | 233 |
| Montana | 100.0 | 42 | 26.4 | 37 | 19.0 | 42 |
| Nebraska | 100.0 | 116 | 32.4 | 110 | 39.8 | 113 |
| Nevada | 100.0 | 37 | 32.1 | 36 | 72.8 | 37 |
| New Hampshire | 100.0 | 45 | 25.7 | 40 | 46.5 | 43 |
| New Jersey | 97.5 | 277 | 33.6 | 250 | 37.5 | 264 |
| New Mexico | 98.3 | 58 | 27.0 | 51 | 41.8 | 55 |
| New York | 99.1 | 562 | 32.0 | 510 | 45.6 | 529 |
| North Carolina | 97.7 | 354 | 27.7 | 323 | 42.3 | 345 |
| North Dakota | 100.0 | 24 | 28.6 | 21 | 30.4 | 23 |
| Ohio | 99.8 | 408 | 31.2 | 377 | 48.6 | 399 |
| Oklahoma | 98.0 | 99 | 29.4 | 86 | 19.8 | 96 |
| Oregon | 98.8 | 167 | 29.3 | 154 | 24.5 | 163 |
| Pennsylvania | 99.2 | 622 | 37.6 | 577 | 76.0 | 597 |
| Rhode Island | 94.3 | 35 | 38.9 | 30 | 90.3 | 31 |
| South Carolina | 98.6 | 145 | 30.8 | 131 | 46.7 | 137 |
| South Dakota | 100.0 | 37 | 34.5 | 36 | 8.3 | 36 |
| Tennessee | 99.5 | 214 | 30.1 | 191 | 43.5 | 209 |
| Texas | 97.9 | 479 | 29.5 | 446 | 27.8 | 461 |
| Utah | 98.6 | 71 | 22.1 | 66 | 56.1 | 66 |
| Vermont | 100.0 | 29 | 27.5 | 26 | 58.6 | 29 |
| Virginia | 98.6 | 297 | 30.4 | 270 | 55.9 | 288 |
| Washington | 99.5 | 221 | 27.2 | 199 | 29.2 | 216 |
| West Virginia | 100.0 | 53 | 32.2 | 45 | 56.9 | 51 |
| Wisconsin | 98.1 | 260 | 26.7 | 239 | 30.6 | 248 |
| Wyoming | 100.0 | 15 | 27.0 | 12 | 26.7 | 15 |
| Possessions | 97.0 | 34 | 32.1 | 31 | 80.6 | 31 |

[a] Excludes single specialty pediatric groups.

*Chapter 8*

# Trends, Summary, and Conclusions

Chapters 1 through 7 of this report have described the results of the AMA's most recent census of medical groups. This chapter puts those results into historical context by describing trends in medical group practices traced by previous AMA census surveys of medical groups. Results of the current census are summarized and, finally, conclusions are drawn regarding the future of medical group practices.

## Trends

As noted in the first chapter, the AMA has conducted surveys of medical group practices since the 1930s. Trend data will be presented, however, beginning with the 1965 survey. The methods and questionnaire design of the surveys conducted since 1965 are similar, thus allowing comparisons. Nevertheless, there were some differences in the surveys, which are noted in the tables where appropriate.

Table 8-1 reports the growth in the number of groups and group physicians since 1965. Between 1965 and 1988, the number of groups increased by 286 percent, and the number of group physicians increased by 448 percent. The number of groups grew at the greatest rate between 1965 and 1969 and between 1980 and 1984. The smallest rate of growth in groups occurred between 1984 and 1988.

The general trend since 1965, with the exception of 1984, has been a declining rate of growth in the number of group practices. Although the declining rate in growth may be a result, in part, of differences among the various studies, there are a number of other possible reasons as to why the number of groups may not be growing as fast as in the past. First, groups may not be forming at the same rate as in the past. Physicians, for a variety of reasons, may find joining an existing group preferable to forming a new group. Data, in fact, indicate that the percentage of physicians who are employees as opposed to practice owners is increasing (Cotter 1986). Second, due to increased competition or increasing limits on reimbursement from Medicare and other third-party payors, groups may be more likely to go out of business or merge with other groups or organizations. These factors have been linked to the demise of other health care providing organizations such as hospitals and HMOs.

**TABLE 8-1**
**Number of Groups and Group Physicians and Percent Change from Previous Census Year, 1965-1988**

| Year | Number of Groups | % Change from Previous Census Year | Group Physicians | % Change from Previous Census Year |
|---|---|---|---|---|
| 1965[a] | 4,289 | — | 28,381 | — |
| 1969 | 6,371 | 48.5 | 40,093 | 41.3 |
| 1975 | 8,483 | 33.2 | 66,842 | 66.7 |
| 1980 | 10,762 | 26.9 | 88,290 | 32.1 |
| 1984 | 15,485 | 43.9 | 140,392[b] | 59.0 |
| 1988 | 16,579 | 7.1 | 155,628[b] | 10.8 |

[a] Medical groups were defined in terms of full-time physicians.
[b] These figures represent physician positions. These figures were obtained by asking groups to report the number of physicians in their groups. Because physicians may practice in more than one group, some physicians may be counted more than once. Thus, these figures may overestimate the number of group physicians.

The growth in number of group physicians reported in Table 8-1 is not only absolute but is also relative to the total number of nonfederal physicians. Table 8-2 reports that whereas group physicians represented 10.6 percent of all nonfederal physicians in 1965, they represented 30.0 percent of all nonfederal physicians in 1988. Thus, there appears to be a slow but steady trend toward the group practice of medicine. This gradual trend toward group practice is supported indirectly by

data that have reported slight declines in solo practices between 1983 and 1986 (Emmons 1988).

As the number of groups continues to increase, the mean size of groups also continues to increase (Table 8-3). For groups of each specialty composition type, the trend is toward larger mean sizes. Although multispecialty groups have always been larger, on average, than either single specialty or family/general practice groups, the growth in their average size over all census years except 1988 has also been greater.

Regarding specialty composition, the trend is toward single specialty groups (Table 8-4). Between 1965 and 1988, the number of single specialty groups grew by 442 percent, whereas the number of multispecialty groups grew by 114 percent and the number of family/general practice groups grew by 148 percent. Although the numbers of multispecialty and family/general practice groups have increased since 1965, they represent a decreasing proportion of all groups. The number of single specialty groups may be increasing at a much more rapid rate because these groups are easier to finance or start up than larger multispecialty groups.

Although the percentage of all multispecialty groups is decreasing, multispecialty groups account for the most group physicians because of their larger mean size (Table 8-5). The number of physicians in single specialty groups, however, is approaching the number of physicians in multispecialty groups. The percentage of group physicians in family/general practice groups has remained fairly stable over all census years, varying by only a few percentage points from year to year.

The specialties of physicians involved in group practice are reported in Table 8-6 for each census year. Many specialties were represented in the same proportion in 1965 as in 1988. For example, 7.4 percent of all group physicians specialized in pediatrics in 1965 and 7.8 percent specialized in pediatrics in 1988. Others, such as family/general practice, have decreased over time. To some extent these patterns may reflect changes in the total physician population (Roback, et al. 1987).

Groups have changed how they organize legally over time (Table 8-7). The percentage of groups organized as partnerships has decreased considerably, particularly between 1969 and 1975. Conversely, the percentage of groups organized as professional corporations has increased considerably, particularly between 1969 and 1975. Apparently, between 1969 and 1975, there were changes in the environment of medicine that made the formation of professional corporations more

**TABLE 8-2**
**Group Physicians as a Percentage of Nonfederal Physicians, 1965-1988**

| Year | % Group Physicians | Total Nonfederal Physicians |
|---|---|---|
| 1965 | 10.6 | 268,040 |
| 1969 | 17.6 | 227,758 |
| 1975 | 23.5 | 284,760 |
| 1980 | 26.2 | 337,514 |
| 1984 | 28.4 | 440,672 |
| 1988 | 30.0 | 494,356 |

**TABLE 8-3**
**Mean Group Size by Specialty Composition 1965-1988**

| | Specialty Composition | | | |
|---|---|---|---|---|
| Year | Single Specialty | Multi-specialty | Family/General Practice | Total |
| 1965[a] | 4.1 | 11.6 | 3.5 | 6.6 |
| 1969 | 4.1 | 10.1 | 3.5 | 6.3 |
| 1975 | 5.1 | 13.2 | 4.4 | 7.9 |
| 1980 | 4.8 | 15.2 | 4.5 | 8.2 |
| 1984 | 5.8 | 26.6 | 5.7 | 9.1 |
| 1988 | 6.2 | 24.2 | 5.0 | 9.6 |

[a] Medical groups were defined in terms of full-time physicians.

**TABLE 8-4**
**Distribution of Groups by Specialty Composition, 1965-1988**

| | Specialty Composition | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Single Specialty | | Multi-specialty | | Family/General Practice | | Total | |
| Year | % | N | % | N | % | N | % | N |
| 1965[a] | 50.4 | 2,161 | 34.4 | 1,477 | 15.2 | 651 | 100.0 | 4,289 |
| 1969 | 49.7 | 3,169 | 38.0 | 2,418 | 12.3 | 784 | 100.0 | 6,371 |
| 1975 | 54.2 | 4,601 | 35.1 | 2,976 | 10.7 | 906 | 100.0 | 8,483 |
| 1980 | 57.2 | 6,156 | 33.0 | 3,552 | 9.8 | 1,054 | 100.0 | 10,762 |
| 1984 | 70.0 | 10,635 | 18.3 | 2,781 | 11.7 | 1,770 | 100.0 | 15,186[b] |
| 1988 | 70.6 | 11,709 | 19.1 | 3,168 | 9.8 | 1,618 | 99.5[c] | 16,495[d] |

[a] Medical groups were defined in terms of full-time physicians.
[b] Excludes 299 groups with unknown specialty composition.
[c] Percentages do not sum to 100 due to rounding.
[d] Excludes 84 groups with unknown specialty composition.

advantageous than the formation of partnerships, and these changes persist today.

In sum, physicians are increasingly practicing in medical groups. The medical groups in which they practice are getting larger, and they are increasingly single specialty groups. The majority of medical groups organize as professional corporations, and have done so since the 1970s.

**TABLE 8-5**
**Distribution of Group Physicians by Specialty Composition of the Group, 1965-1988**

| | Specialty Composition | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Single Specialty | | Multi-specialty | | Family/General Practice | | Total | |
| Year | % | N | % | N | % | N | % | N |
| 1965[a] | 31.6 | 8,956 | 60.4 | 17,141 | 8.0 | 2,284 | 100.0 | 28,381 |
| 1969 | 32.6 | 13,053 | 60.7 | 24,349 | 6.7 | 2,691 | 100.0 | 40,093 |
| 1975 | 35.3 | 23,572 | 58.8 | 39,311 | 5.9 | 3,959 | 100.0 | 66,842 |
| 1980 | 33.4 | 29,456 | 61.3 | 54,122 | 5.3 | 4,712 | 100.0 | 88,290 |
| 1984[b] | 43.1 | 59,917 | 49.9 | 69,371 | 7.1 | 9,839 | 100.1[c] | 139,127[d] |
| 1988[b] | 46.2 | 71,861 | 48.7 | 75,760 | 5.1 | 8,007 | 100.0 | 155,628 |

[a] Medical groups were defined in terms of full-time physicians.
[b] These figures represent physician positions. These figures were obtained by asking groups to report the number of physicians in their groups. Because physicians may practice in more than one group, some physicians may be counted more than once. Thus, these figures may overestimate the number of group physicians.
[c] Percentages do not sum to 100 due to rounding.
[d] Excludes 1,265 physician positions in groups with unknown specialty composition.

**TABLE 8-6**
**Distribution of Group Physicians by Specialty, 1965-1988**

| | Year | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1965[a] | | 1969 | | 1975 | | 1980 | | 1984[b] | | 1988[b] | |
| Specialty | % | N | % | N | % | N | % | N | % | N | % | N |
| Anesthesiology | 7.6 | 2,172 | 7.5 | 2,956 | 6.5 | 4,086 | 6.3 | 4,731 | 6.1 | 7,573 | 6.8 | 10,052 |
| Cardiovascular Diseases | — | — | 0.6 | 253 | 2.3 | 1,418 | 2.6 | 1,964 | 3.5 | 4,360 | 3.5 | 5,241 |
| Diagnostic Radiology | — | — | — | — | 2.0 | 1,240 | 3.2 | 2,390 | 2.3 | 2,831 | — | — |
| Emergency Medicine | — | — | — | — | — | — | — | — | — | — | 7.7 | 11,461 |
| Family/General Practice | 19.3 | 5,477 | 18.2 | 7,162 | 13.5 | 8,531 | 12.5 | 9,316 | 12.6 | 15,728 | 11.7 | 17,302 |
| General Surgery | 10.3 | 2,919 | 9.4 | 3,708 | 8.9 | 5,627 | 7.1 | 5,314 | 4.9 | 6,191 | 4.8 | 7,165 |
| Internal Medicine | 16.9 | 4,790 | 16.4 | 6,458 | 15.4 | 9,707 | 16.2 | 12,104 | 13.8 | 17,321 | 14.4 | 21,343 |
| Neurology | — | — | 0.7 | 290 | 2.1 | 1,305 | 2.5 | 1,855 | 2.2 | 2,694 | 1.8 | 2,674 |
| Obstetrics/ Gynecology | 8.3 | 2,356 | 8.1 | 3,211 | 7.9 | 4,978 | 7.5 | 5,624 | 6.6 | 8,258 | 6.3 | 9,390 |
| Ophthalmology | 2.5 | 719 | 2.6 | 1,029 | 2.6 | 1,643 | 2.4 | 1,830 | 2.6 | 3,216 | 2.6 | 3,886 |
| Orthopedic Surgery | 4.9 | 1,381 | 4.9 | 1,939 | — | — | — | — | — | — | 4.5 | 6,628 |
| Pathology | 2.3 | 657 | 3.1 | 1,225 | 3.4 | 2,145 | 3.7 | 2,732 | 3.4 | 4,280 | 3.4 | 5,072 |
| Pediatrics | 7.4 | 2,086 | 7.4 | 2,924 | 7.2 | 4,546 | 7.3 | 5,478 | 7.3 | 9,182 | 7.8 | 11,509 |
| Psychiatry | 2.2 | 620 | 2.4 | 955 | 3.3 | 2,051 | 3.1 | 2,333 | 3.2 | 4,020 | 3.3 | 4,891 |
| Radiology | 8.6 | 2,452 | 8.9 | 3,499 | 8.1 | 5,103 | 7.2 | 5,342 | 7.3 | 9,122 | 9.4 | 14,009 |
| Other specialties | 9.7 | 2,750 | 9.7 | 3,811 | 16.8 | 10,582 | 18.3 | 13,687 | 24.3 | 30,359 | 11.9 | 17,639 |
| Total | 100.0 | 28,379[c] | 99.9[d] | 39,420[e] | 100.0 | 62,962[f] | 99.9[d] | 74,700[g] | 100.1[d] | 125,135[h] | 99.9[d] | 148,267[i] |

[a] Medical groups were defined in terms of full-time physicians.
[b] These figures represent physician positions. These figures were obtained by asking groups to report the number of physicians in their groups. Because physicians may practice in more than one group, some physicians may be counted more than once. Thus these figures may overestimate the number of group physicians.
[c] Excludes 2 physicians whose specialties were unspecified.
[d] Percentages do not sum to 100 due to rounding.
[e] Excludes 623 physicians whose specialties were unspecified.
[f] Excludes 3,880 physicians whose specialties were unspecified.
[g] Excludes 1,037 physicians whose specialties were unspecified.
[h] Excludes 15,257 physician positions whose specialties were unspecified.
[i] Excludes 7,366 physician positions whose specialties were unspecified.

**TABLE 8-7**
**Distribution of Groups by Legal Form of Organization, 1965-1988**

| Legal Form of Organization | Year | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1965[a] | | 1969 | | 1975 | | 1980 | | 1984 | | 1988 | |
| | % | N | % | N | % | N | % | N | % | N | % | N |
| Sole proprietorship | 3.0 | 130 | 2.8 | 174 | 1.6 | 119 | 1.2 | 110 | 1.0 | 106 | 0.7 | 74 |
| Partnership | 77.8 | 3,336 | 68.7 | 4,303 | 27.2 | 2,053 | 16.7 | 1,589 | 14.7 | 1,628 | 16.4 | 1,741 |
| Professional corporation | 8.1 | 346 | 15.6 | 978 | 61.0 | 4,606 | 70.6 | 6,711 | 73.0 | 8,109 | 71.2 | 7,541 |
| For-profit corporation | — | — | — | — | — | — | — | — | — | — | 2.4 | 249 |
| Not-for-profit corporation | — | — | — | — | — | — | — | — | — | — | 3.4 | 364 |
| Association | 8.8 | 379 | 9.2 | 578 | 6.4 | 484 | 5.9 | 563 | 5.0 | 560 | 3.6 | 46 |
| Foundation | 0.3 | 14 | 0.3 | 19 | 0.4 | 33 | 0.5 | 44 | 0.5 | 59 | 0.4 | 199 |
| Other | 2.0 | 84 | 3.4 | 211 | 3.3 | 252 | 5.1 | 482 | 5.8 | 643 | 1.9 | 137 |
| Total | 100.0 | 4,289 | 100.0 | 6,263 | 99.9[b] | 7,547 | 100.0 | 9,499 | 100.0 | 11,105[c] | 100.0 | 10,591[d] |

[a] Medical groups were defined in terms of full-time physicians.
[b] Percentages do not sum to 100 due to rounding.
[c] Excludes 138 long-form respondents for whom legal form of organization is unknown.
[d] Excludes 153 long-form respondents for whom legal form of organization is unknown.

## Summary of Census Results

The AMA's Census of Medical Groups permitted the identification of general trends in the group practice of medicine, as well as the characteristics of the current population of medical groups. The results of the census are summarized below, according to chapter topic.

### Size and Specialty Composition

- The mean number of physicians per group is 9.6, and the median number of physicians per group is 4. As these statistics indicate, most groups are small: 50.3 percent of all groups report 3 or 4 physicians. However, some very large groups exist: 118 groups report 100 or more physicians with the largest group containing more than 2,000 physicians.
- Although groups with 100 or more physicians represent less than one percent of all groups, they represent 25 percent of all group physician positions. Conversely, groups with 3 or 4 physicians (which represent 50.3 percent of all groups) represent 18 percent of all group physician positions.
- Groups employ, on average, 2.5 nonphysician staff per physician.
- Groups were placed into one of three possible categories of specialty composition: single specialty, multispecialty, and family/general practice. Single specialty groups represent 71 percent of all groups and 46 percent of all group physicians; multispecialty groups represent 19 percent of all groups and 49 percent of all group physicians; and family/general practice groups represent 10 percent of all groups and 5 percent of all group physicians.
- The mean number of physicians per single specialty group is 6.2; the average size of multispecialty groups is 24.2; and the average size of family/general practice groups is 5.0.
- Physicians that specialize in emergency medicine and radiology are more likely to practice in groups than physicians with other specialties. Physicians that specialize in psychiatry and general surgery are least likely to practice in groups.
- Physicians with hospital-related specialties, such as anesthesiology, emergency medicine and radiology, are more likely to be found in single specialty than in multispecialty groups, whereas physicians with primary care specialties, such as family/general practice, internal medicine, or pediatrics, are more likely to be found in multispecialty than in single specialty groups.

### Facilities

- Of all groups, 6 percent own or lease a pharmacy, 29 percent own or lease a clinical laboratory, 34 percent own or lease radiology facilities, 29 percent own or lease electrocardiology facilities, 16 percent own or lease audiology facilities, 6 percent own or lease an optometer, and 9 percent own or lease a surgical suite.
- Twenty percent of all groups currently use a computer for clinical records, whereas 16 percent plan to; 16 percent currently use a computer for online medical information, whereas 17 percent plan to; and 3 percent currently use a computer for drug utilization review, whereas 10 percent plan to.

### Ownership and Control

- Regarding medical group practices' legal form of organization, 71.2 percent of all groups are professional corporations, 16.4 percent are partnerships, 3.6 percent are associations, 3.4 percent are not-for-profit corporations, 2.4 percent are investor-owned for-profit corporations, 1.9 percent are some other legal form of organization, 0.7 percent are sole proprietorships, and 0.4 percent are foundations.
- On average, 71 percent of a group's physicians are owners.
- In 83 percent of all groups, group physicians make decisions about hiring/firing physicians; in 81 percent, group physicians make decisions about setting fees; in 94 percent, group physicians make decisions about physician work hours; in 91 percent, group physicians make decisions about payment of physician memberships; in 95 percent, group physicians make decisions about evaluation of diagnostic equipment and therapeutic equipment; and in 79 percent of all groups, group physicians make decisions about the evaluation of medical supplies (excluding pharmaceuticals).

### HMO, PPO, Hospital, and Medicare Relationships

- Eight percent of all groups are organized to provide services to an HMO; 50 percent contract with one or more HMOs to provide services; and 20 percent do business with HMOs on a referral basis. About 68 percent of all groups report one or more of these HMO relationships.
- Fifty-six percent of all groups contract with one or more PPOs.
- The percentage of annual revenue derived from HMOs is, on average, 15 percent, and the percentage of annual revenue derived from PPOs is, on average, 12 percent.
- Seventy-three percent of all groups report hospital privileges as their primary hospital affiliation.
- Excluding groups specializing in pediatrics, 99 percent of all groups serve Medicare patients, who represent, on average, 31 percent of medical groups' annual revenue.
- Forty-eight percent of groups serving Medicare patients have signed participation contracts.

### Geographic Distribution

- The number of groups in each state is correlated with both the size of the state's population and the number of physicians in the state. For example, the five states with the greatest number of groups are California, Pennsylvania, New York, Florida, and Texas. These states are also the five most populous with respect to general population (U.S. Bureau of the Census 1987) and physician population (Roback et al., forthcoming 1990). The five states with the fewest number of groups are Utah, Wyoming, North Dakota, Delaware, and Vermont.
- It is estimated that in three states over 50 percent of nonfederal physicians practice in groups: Minnesota, North Dakota, and Wisconsin.
- The six states with the largest mean group size are North Dakota (23.5), Hawaii (15.6), California (15.4), Minnesota (15.5), Wisconsin (13.2), and Washington (13.2).
- The five states with the smallest average group size are Maine (5.2), Idaho (5.4), Alaska (5.6), Mississippi (5.8), and Wyoming (5.9).
- The number of HMOs in each state is directly correlated with the percentage of groups that are related to one or more HMOs. Similarly, the number of PPOs in each state is directly correlated with the percentage of groups that contract with one or more PPOs.

In sum, the current population of medical group practices is a heterogeneous one in terms of size, organization, and specialty composition. The size of groups ranges from three or four physicians to thousands of physicians. Legal organization of groups include professional corporations as well as investor-owned for-profit corporations. And groups, whether single or multispecialty, are composed of a diversity of practice specialties.

The control of groups seems largely in the hands of group physicians. The majority of groups are professional corporations, with the majority of group physicians owners. Moreover, physicians have considerable input into, if not total control over, decisions regarding the business aspects of practice.

Physicians' control over groups may be restricted increasingly in the future by their relationships with HMOs, PPOs, and Medicare. Half of all groups contract with HMOs, more than half contract with PPOs, and nearly half have signed Medicare participation contracts. The demands these entities continue to place on groups will affect the quantity, quality, and cost of the care provided.

## Conclusions

This report has examined trends in the development of medical group practices and the characteristics of the

current population of medical groups. The future of the health care system in general, and medical group practices in particular, will be shaped by various demographic, social and health care policy trends. This section uses the data presented in this report, as well as observed trends in the current health care environment, to anticipate the future of medical group practices.

- The number of medical group practices will continue to grow, but there will be increased rates of mergers and dissolutions among medical groups.

  Trend data presented in this report have documented the growth in groups over the past two decades. This trend is likely to continue, given the continued reliance on "managed care" as a policy to control medical costs. That managed care is here to stay for the feasible future is pretty clear; although the number of HMOs may be decreasing, enrollments are up (Gruber et al., 1989). Managed care reduces hospital use (Luft 1988), resulting in the increased use of ambulatory care. This increased emphasis on ambulatory care will probably foster the development of group practices.

  At the same time that managed care stimulates the development of group practices, however, it makes survival of medical groups more difficult. Managed care has been linked with restricted revenues, as well as with increased expenses for ambulatory care providers (Koska 1988). Thus, there are likely to be increased rates of mergers and dissolutions among medical group practices as they attempt to respond to these financial constraints. Increased mergers may lead to increasing group sizes.

- Medical group practices that manage to convey or document that they provide quality care and/or are cost-effective will be better able to survive.

  Quality of care is an important issue for physicians (and other providers), patients, and purchasers of medical care. Although recent emphasis has been on defining quality in terms of patient outcomes, there are many indicators of quality care. For example, quality may be related to a practice's personnel, operations, and/or reputation (Sandrick 1986).

  Groups that are able to demonstrate quality in some fashion are more likely to survive for several reasons. Groups that deliver quality care are more likely to negotiate favorable or selective contracts with managed care plans, thereby ensuring or controlling a base of patients. Public funding of health services, as well as the purchase of medical care by employers, has led to greater accountability on the part of providers (Belin 1986). Providers will have to demonstrate that they can provide a quality product at a good price, or their services will not be purchased.

  Larger group practices may be favored because they can support a wider range of services and more sophisticated utilization review and control mechanisms (Aaron and Breindel 1988). This report has presented data that show that larger practices are more likely to own or lease a number of facilities such as pharmacy, clinical laboratory, and radiology. Larger groups are also more likely to use computers for clinical records, online medical information, and drug utilization review, applications with implications for the ability to deliver and monitor the quality of care provided.

  Long-established or university-related group practices may also be more likely to survive. Some practices have been in existence long enough to establish local, regional, national, and even international reputations for excellence. Similarly, groups affiliated with universities may be regarded as having access to and thus providing care based on the most current medical knowledge available, as well as being quality providers due to their associations with prestigious institutions (Johnson 1987).

- Hospitals and medical group practices will form closer economic relationships and multiple relationships.

  With managed care and Medicare limiting hospital care, closer relationships may develop between hospitals and medical group practices (Fey 1986; Sandrick 1986). Hospitals may look to groups as a source of revenue and/or as a way to control referrals. Hospitals may even establish their own clinics and subsidize clinic physicians to achieve these ends (Golin 1988). Groups may find that hospitals can provide management and other important services.

  Trend data that document the nature of the relationships between hospitals and groups are not available from AMA census surveys of medical groups. However, current census information indicates that 97 percent of all groups report a hospital affiliation, and the primary hospital affiliation reported by medical group practices is hospital privileges. In the future, the economic interests of hospitals and groups will drive them even closer together, perhaps through ownership or through the establishment of multiple agreements or joint ventures. A study of joint venture activity among members of the American Group Practice Association

and the Medical Group Management Association found that medical group practices were more likely to joint venture with hospitals than any other type of organization (Ernst & Whinney 1987).

- Medical group practices will become more geographically dispersed and/or more specialized in local markets.

The patient has become a consumer, and the physician has become a provider. Managed care, Medicare, and purchasers of medical care are examining in greater detail the quality of the product they are purchasing. A shift in perspective has occurred, in which the purchase and delivery of medical care is now regarded by some as a business transaction.

As most business organizations do, providers will have to compete for business. Groups may compete in a number of ways. Groups may improve access to care, such as offering expanded office hours, and increase their access to markets by expanding geographically and establishing satellite clinics (Sandrick 1986). Groups may also compete by specializing in local markets.

Although data are not available to document trends in satellite formation among the population of medical groups, certainly anecdotal data exist that attest to the use of this strategy in the medical marketplace. For example, that many large, famous clinics are using this strategy is well-known (Sandrick 1986). However, in the process of conducting the census, many smaller group practices reported multiple office locations.

That groups may compete by specializing in local markets is consistent with the data presented in this report. The trend in medical group practices is toward single specialty groups, and the trend among physicians is to specialize (Roback et al. 1987). Although physicians' increasing tendency to specialize will delimit their groups' markets, it will also serve to set their services apart from other groups.

In sum, the number of medical group practices has grown significantly over the past two decades. The continued growth of groups, however, is likely to be affected by a number of health policy, social and demographic trends. In light of a number of these trends, future changes likely to occur in the population of medical group practices were discussed.

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# *Appendix A*
# Survey Instruments

## CENSUS OF MEDICAL GROUPS

*1988 American Medical Association*

**American Medical Association**
**Division of Survey & Data Resources**
**P.O. Box 10971**
**Chicago, IL 60610**

Please make any name/address corrections in the space below. Please print

_____ (name) 7-36

_____ (name) 37-66

_____ (street address) 67-96

_____ (city) 97-124 (state) 125-126

_____ (zip) 127-135

Thank you for your cooperation in participating in this survey. Please complete the following questionnaire and return it in the envelope provided. If you have received duplicate copies of this survey, please complete only one form and return it together with all duplicates in the enclosed envelope.

### I. DEFINITION OF GROUP PRACTICE

1. Is the group organized as defined below?

   Group medical practice is the application of medical service by *three or more physicians* formally organized to provide medical care, consultation, diagnosis and/or treatment through the joint use of equipment, records and personnel, and with income from medical practice distributed according to some prearranged plan.

   Yes 7 ☐ 1 (GO TO Q2) No ☐ 2

   **IF NO:** Please describe how your organization differs from this definition and return the form in the postage-paid envelope provided.

   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____ 8-9

2. A number of group practices consist of a parent group with one or more branch or satellite clinics. By satellite clinic we mean an off-site facility with three or more physicians that operates on a full-time basis. Does this arrangement describe your group?

   Yes 10 ☐ 1 No ☐ 2 (GO TO Q3)

   **IF YES:**

   A. Is the group indicated on the mailing label the parent or satellite?
   Parent 11 ☐ 1 (GO TO Q2B) Satellite ☐ 2 (GO TO Q2C)

   B. If parent, please provide a list of your group's satellite locations. (GO TO Q3).

   C. If satellite, please provide the name and address of the *parent group* on the lines below. Please print.

   Name _____

   Address _____
   (Local Address) (City, State, Zip Code)

   **If satellite,** please respond to the following questions in terms of *your clinic only*. For example, when asked for the total number of physicians in the group, report the number of physicians at the location indicated on the mailing label.

# *Appendix A (continued)*
# Survey Instruments

## II. SPECIALTY COMPOSITION

3. Is the group multispecialty or single specialty?
(Check One)

A. Multispecialty? 7 ☐ →

B. Single Specialty? 8 ☐ ↓

What specialty? _____ 9-11

TOTAL number of PHYSICIANS in group ..... _____ 12-16

Total FULL-TIME physicians ..... _____ 17-21

Total PART-TIME physicians ..... _____ 22-26

Total Number of OWNER/PARTNER Physicians ..... _____ 27-31

Total Number of EMPLOYED Physicians ..... _____ 32-36

**Please include a roster of the group's physicians with the completed questionnaire.**
**Please print.**

Indicate the total number of physicians in each of the following specialties.

Anesthesiology ..... _____ 37-40

Cardiovascular Diseases ..... _____ 41-44

Emergency Medicine ..... _____ 45-48

General/Family Practice ..... _____ 49-52

General Surgery ..... _____ 53-56

Internal Medicine ..... _____ 57-60

Neurology ..... _____ 61-64

Obstetrics/Gynecology ..... _____ 65-68

Ophthalmology ..... _____ 69-72

Orthopedic Surgery ..... _____ 73-76

Pathology ..... _____ 77-80

Pediatrics ..... _____ 81-84

Psychiatry ..... _____ 85-88

Radiology ..... _____ 89-92

Other Surgical Specialties ..... _____ 93-96

(SPECIFY)

_____ 97-99

_____ 100-102

Other Medical Specialties ..... _____ 103-106

(SPECIFY)

_____ 107-109

_____ 110-112

TOTAL PHYSICIANS ..... _____ 113-117

Total FULL-TIME Physicians ..... _____ 118-122

Total PART-TIME Physicians ..... _____ 123-127

Total Number of OWNER/PARTNER Physicians _____ 128-132

Total Number of EMPLOYED Physicians ... _____ 133-137

## III. ORGANIZATION OF THE PRACTICE

4. In what year was the group founded? Year: ☐☐☐☐ 35-38

5. Does the group employ one or more individuals in the following capacities?

| | | Yes | No | If YES to 5A or 5B |
|---|---|---|---|---|
| a. President/CEO physician | 13 | ☐1 | ☐2 | (Please Name: _____) 17-46 |
| b. Group Administrator | 14 | ☐ | ☐ | (Please Name: _____) 47-76 |
| c. Medical Director | 15 | ☐ | ☐ | |
| d. Business or Office Manager | 16 | ☐ | ☐ | |

6. What is the group's telephone number? (___ ___ ___) ___ ___ ___ ___ ___ ___ ___ 81-83 84-90

Thank you for your cooperation. Please return the completed questionnaire in the enclosed postage paid envelope. Also, please remember to include the following .....

- a roster of physicians in the group (please print)
- a list of satellite locations, if applicable (see Q2).

*Appendix A (continued)*
Survey Instruments

## CENSUS OF MEDICAL GROUPS

© 1987 American Medical Association

**American Medical Association**
**Division of Survey & Data Resources**
**535 North Dearborn Street**
**Chicago, Illinois 60610**

Please make any name/address corrections in the space below:

_____ 7-36

_____ 37-66

_____ 67-96

_____ 97-126

Thank you for your cooperation in participating in this survey. Please complete the following questionnaire and return it in the envelope provided. If you have received duplicate copies of this survey, please complete only one form and return it together with all duplicates in the enclosed envelope.

### I. DEFINITION OF GROUP PRACTICE

1. Is the group organized as defined below?

   Group medical practice is the application of medical service by *three or more physicians* formally organized to provide medical care, consultation, diagnosis and/or treatment through the joint use of equipment, records and personnel, and with income from medical practice distributed according to some prearranged plan.

   Yes 1 ☐ (GO TO Q2) No ☐ 2

   **IF NO:** Please describe how your organization differs from this definition and return the form in the postage-paid envelope provided.

   _____

   _____

   _____

   _____

   _____

   _____

   _____

2. A number of group practices consist of a parent group with one or more branch or satellite clinics. By satellite clinic we mean an off-site facility with three or more physicians that operates on a full-time basis. Does this arrangement describe your group?

   Yes 1 ☐ No ☐ 2 (GO TO Q3)

   **IF YES:**

   A. Is the group indicated on the mailing label the parent or satellite?

   Parent 1 ☐ (GO TO Q2B) Satellite ☐ 2 (GO TO Q2C)

   B. If parent, please provide a list of your group's satellite locations. (GO TO Q3)

   C. If satellite, please provide the name and address of the *parent group* on the lines below.

   Name _____ 37-71

   Address _____ (Local Address) 72-106 (City, State, Zip Code) 107-141

   If satellite, please respond to the following questions in terms of *your clinic only*. For example, when asked for the total number of physicians in the group, report the number of physicians at the location indicated on the mailing label.

# *Appendix A (continued)*
# Survey Instruments

## II. SPECIALTY COMPOSITION

3. Is the group multispecialty or single specialty? (Check One)

A. Multispecialty? 1 ☐ ——→

B. Single Specialty? 2 ☐ ↓

What specialty? _____ 9-11

TOTAL number of PHYSICIANS in group _____ 12-14

Total FULL-TIME physicians _____ 15-17
Total PART-TIME physicians _____ 18-20
Total Number of OWNER/PARTNER Physicians _____ 21-23
Total Number of EMPLOYED Physicians _____ 24-26

Indicate the total number of physicians in each of the following specialties.

Anesthesiology _____ 27-29
Cardiovascular Diseases _____ 30-32
Emergency Medicine _____ 33-35
General/Family Practice _____ 36-38
General Surgery _____ 39-41
Internal Medicine _____ 42-44
Neurology _____ 45-47
Obstetrics/Gynecology _____ 48-50
Ophthalmology _____ 51-53
Orthopedic Surgery _____ 54-56
Pathology _____ 57-59
Pediatrics _____ 60-62
Psychiatry _____ 63-65
Radiology _____ 66-68
Other Surgical Specialties _____ 69-71
(SPECIFY)

_____ 72-74

_____ 75-77

Other Medical Specialties _____ 78-80
(SPECIFY)

_____ 81-83

_____ 84-86

TOTAL PHYSICIANS _____ 87-89
Total FULL-TIME Physicians _____ 90-92
Total PART-TIME Physicians _____ 93-95
Total Number of OWNER/PARTNER Physicians _____ 96-98
Total Number of EMPLOYED Physicians _____ 99-101

**Please include a roster of the group's physicians with the completed questionnaire.**

## III. ORGANIZATION OF THE PRACTICE

4. What is the legal form of organization under which the group provides professional medical services? (Check One)

Corporation (incorporated legal entity distinct from its members or shareholders) 1 ☐ 1 ——→ A. Is this corporation (Check One)
- A professional corporation 1 ☐ 1
- An investor-owned for-profit corporation 2 ☐ 2
- A not-for-profit corporation 3 ☐ 3

Sole Proprietorship (unincorporated business owned by a single individual) ☐ 2
Partnership (agreement to share in the ownership of an unincorporated business) ☐ 3
Association ☐ 4
Foundation ☐ 5
Other (Please Specify) ☐ 6

(GO TO Q5)

_____ 8-9

5. Does the group have a contract with any preferred provider organizations (PPOs)?

Yes 1 ☐ 1 No ☐ 2 (GO TO Q6)

**IF YES:**

A. Approximately what percentage of the group's annual revenue is generated through PPOs?

☐☐☐ % 12-14

**Please provide a list of PPOs with which the group is affiliated.**

# *Appendix A (continued)*
# Survey Instruments

## III. ORGANIZATION OF THE PRACTICE - continued

6. Which of the following, if any, describes the group's relationship to a health maintenance organization (HMO)?

(Check all that apply)

- Group is organized to provide services to an HMO (physicians are on staff) ☐
- Group has a contract with one or more HMOs (directly or through IPAs) to provide services ☐
- Group does business with one or more HMOs on a referral basis but has no formal contract ☐
- None of the above (GO TO Q7) ☐

**Please provide a list of HMOs with which the group is affiliated.**

A. Approximately what percentage of the group's annual revenue is generated through HMOs (directly or through IPAs)?

☐☐☐ %

7. Does the group serve Medicare patients?

Yes ☐ No ☐ (GO TO Q8)

**IF YES:**

A. Approximately what percentage of the group's annual revenue is generated through Medicare patients?

☐☐☐ %

B. Has your group signed a Medicare participation contract?

Yes ☐ No ☐

8. Does the group have any of the following features?

| | Yes | No |
|---|---|---|
| a. Formal peer review mechanism established by the group | ☐ | ☐ |
| b. Group physicians are required to make referrals only to certain providers | ☐ | ☐ |
| c. Group physicians are required to prescribe according to a formulary | ☐ | ☐ |
| d. Group requires that physicians must conform to length of hospital stay guidelines | ☐ | ☐ |

9. Which of the following *best* describes the relationship, if any, of the group to a hospital? If group is affiliated with more than one hospital, please describe the *primary hospital affiliation.*

(Check One)

- HOSPITAL AND GROUP BOTH OWNED BY SAME ENTITY ☐ 1
- GROUP OWNS HOSPITAL ☐ 2
- HOSPITAL OWNS AND OPERATES GROUP (hospital assumes fiscal accountability for the group, including payment of physicians) ☐ 3
- HOSPITAL ASSOCIATED (hospital and group share fiscal accountability for the group; includes joint ventures) ☐ 4
- HOSPITAL AS LANDLORD (hospital rents space to the group, but the group retains fiscal accountability for the practice) ☐ 5
- GROUP PHYSICIANS HAVE HOSPITAL PRIVILEGES (group has no other formal arrangement with hospitals) ☐ 6
- OTHER (Please describe) ☐ 7

_____

_____

- NO RELATIONSHIP ☐ 8

10. Does the group practice in any of the following settings?

(Check One)

- Ambulatory/urgent care center (facility that maintains extended office hours and provides immediate services on a walk-in basis) ☐ 1
- Surgicenter (surgical facility that provides services on an outpatient basis) ☐ 2
- None of the above ☐ 3

11. In what year was the group founded?

Year: ☐☐☐☐

## IV. FACILITIES

12. Does the group own or lease the following facilities?

| | Yes | | No |
|---|---|---|---|
| | Own | Lease | |
| A. Pharmacy | ☐ | ☐ | ☐ |
| B. Clinical Laboratory | ☐ | ☐ | ☐ |
| C. Radiology | ☐ | ☐ | ☐ |
| D. Electrocardiology | ☐ | ☐ | ☐ |
| E. Audiology | ☐ | ☐ | ☐ |
| F. Optometer | ☐ | ☐ | ☐ |
| G. Surgical Suite | ☐ | ☐ | ☐ |
| H. Other Major Facilities (Please Specify) | | | |
| _____ | ☐ | ☐ | ☐ |
| _____ | ☐ | ☐ | ☐ |

13. Does the group own a videocassette recorder for use in patient education or continuing medical education?

Yes ☐ No ☐

14. Does the group currently use a computer for the following applications?

**IF NO:** Does the group plan computer usage for the following applications in the next year?

| | Currently Use | | Plan to Use | |
|---|---|---|---|---|
| | Yes | No | Yes | No |
| a. Clinical records | ☐ | ☐ | ☐ | ☐ |
| b. On-Line medical information | ☐ | ☐ | ☐ | ☐ |
| c. Drug utilization review | ☐ | ☐ | ☐ | ☐ |

# *Appendix A (continued)*
# Survey Instruments

## V. PERSONNEL

15. Please enter the number of nonphysician staff employed by the group in each of the following categories (IF NONE ENTER ZERO):

| | Number of Staff | |
|---|---|---|
| | Full-Time | Part-Time |
| a. Nurse practitioners, certified nurse anesthetists, and physician assistants | ____ 71-73 | ____ 74-76 |
| b. Registered nurses, licensed practical nurses, and medical assistants | ____ 77-79 | ____ 80-82 |
| c. X-ray and laboratory technicians and assistants | ____ 79-81 | ____ 84-86 |
| d. Registered records administrators, medical records technicians and clerks | ____ 83-85 | ____ 86-88 |
| e. Managers and administrators | ____ 85-87 | ____ 88-90 |
| f. Other (Please specify: _____) | ____ 87-89 | ____ 90-92 |

16. Are decisions about the following items made by . . .

| | Each Physician Individually | Committee of Physicians | Committee of Physicians and Administrators | Primarily Administrators | Other (Please Specify) |
|---|---|---|---|---|---|
| a. Hiring/firing of physician personnel | 121 ☐ 1 | ☐ 2 | ☐ 3 | ☐ 4 | _____ 128-129 |
| b. Setting of fees | 122 ☐ | ☐ | ☐ | ☐ | _____ 130-131 |
| c. The minimum number of work hours for physicians | 123 ☐ | ☐ | ☐ | ☐ | _____ 132-133 |
| d. Payment of physicians' memberships in professional societies | 124 ☐ | ☐ | ☐ | ☐ | _____ 134-135 |
| e. Evaluation of diagnostic equipment | 125 ☐ | ☐ | ☐ | ☐ | _____ 7-8 |
| f. Evaluation of therapeutic equipment | 126 ☐ | ☐ | ☐ | ☐ | _____ 9-10 |
| g. Evaluation of medical supplies (excluding pharmaceuticals) | 127 ☐ | ☐ | ☐ | ☐ | _____ 11-12 |

17. Does the group employ one or more individuals in the following capacities?

| | Yes | No | If YES to 17A or 17B |
|---|---|---|---|
| a. President/CEO physician | 13 ☐ 1 | ☐ 2 | (Please Name: _____) 17-18 |
| b. Group Administrator | 14 ☐ | ☐ | (Please Name: _____) 47-76 |
| c. Medical Director | 15 ☐ | ☐ | |
| d. Business or Office Manager | 16 ☐ | ☐ | |

18. Does the group pay for the following memberships for physicians in the group?

| | Yes | | No |
|---|---|---|---|
| | Partial Payment | Full Payment | |
| a. Metropolitan/County Medical Society | 77 ☐ 1 | ☐ 2 | ☐ 3 |
| b. State Medical Association | 78 ☐ | ☐ | ☐ |
| c. American Medical Association | 79 ☐ | ☐ | ☐ |
| d. National Scientific Medical Societies | 80 ☐ | ☐ | ☐ |

19. What is the group's telephone number?

( ) — — — - — — — — 81-83 84-90

**Thank you for your cooperation. Please return the completed questionnaire in the enclosed postage-paid envelope. Also, please remember to include the following . . .**

- **a roster of physicians in the group**
- **a list of the satellite locations, if applicable (see Q2).**
- **a list of the HMOs and or PPOs with which the group is affiliated (see Q5 and Q6).**

# *Appendix B*
# Definition of Specialty Composition

Family/General Practice Groups: Groups composed entirely of family or general practitioners.

Multispecialty Groups: Groups providing services in at least two major specialties.

Single Specialty Groups: Groups providing services entirely in one major specialty, except groups composed of general or family practitioners.

# *Appendix C*
# Specialty Classifications

Anesthesiology
Cardiovascular Diseases
Emergency Medicine
General or Family Practice

General Surgery
- Abdominal Surgery
- Cardiovascular Surgery
- General Surgery
- Hand Surgery
- Head and Neck Surgery
- Pediatric Surgery
- Traumatic Surgery
- Vascular Surgery

Internal Medicine
- Allergy and Immunology
- Diabetes
- Diagnostic Laboratory Immunology
- Endocrinology
- Geriatrics
- Hematology
- Immunology
- Infectious Diseases
- Internal Medicine
- Nephrology
- Nutrition
- Oncology
- Rheumatology

Neurology
- Child Neurology
- Neurology

Obstetrics and Gynecology
- Gynecology
- Gynecological Oncology
- Maternal and Fetal Medicine
- Obstetrics
- Obstetrics and Gynecology
- Reproductive Endocrinology

Ophthalmology

Orthopedic Surgery

Pathology
- Anatomic Pathology
- Anatomic/Clinical Pathology
- Bloodbanking
- Clinical Pathology
- Chemical Pathology
- Dermatopathology
- Immunopathology
- Medical Microbiology
- Neuropathology
- Radioisotophic Pathology

Pediatrics
- Adolescent Medicine
- Neonatal - Perinatal Medicine
- Pediatrics
- Pediatrics, Endocrinology
- Pediatrics, Hematology-Oncology
- Pediatrics, Nephrology

Psychiatry
- Psychiatry
- Psychoanalysis

Radiology
- Diagnostic Radiology
- Nuclear Radiology
- Pediatric Radiology
- Radiology

Other Medical Specialties
- Allergy
- Dermatology
- Gastroenterology
- Pediatric Allergy
- Pediatric Cardiology
- Pulmonary Diseases

Other Surgical Specialties
- Colon and Rectal Surgery
- Neurological Surgery
- Otolaryngology
- Facial Plastic Surgery
- Plastic Surgery
- Thoracic Surgery
- Urology

Other Specialties:
- Aerospace Medicine
- Critical Care Medicine
- Child Psychiatry
- Forensic Pathology
- General Preventive Medicine
- Legal Medicine
- Nuclear Medicine
- Occupational Medicine
- Clinical Pharmacology
- Public Health
- Physical Medicine and Rehabilitation
- Radiation Oncology
- Other Specialties

# *Appendix D*
# Definitions of Legal Forms of Organization

Association - An association is not a corporation but includes some of its desirable features such as centralized management, continuity of organization, and continuity of life. The individual physician does not enjoy limited personal liability, but, unlike a partnership, is not liable for the negligent acts of associated physicians. In some states where professional corporations are prohibited, associations may be formed to gain some of the advantages of a corporation.

Foundation - A foundation is a nonstock, nonprofit corporation organized under state law for charitable, scientific, philanthropic, religious, or educational purposes. Management is centralized in a board of directors and officers. Although a foundation is strictly nonprofit, it may accumulate capital assets for the purposes stated in the articles of incorporation. Physicians working in a foundation are employees of the foundation.

Investor-owned for-profit corporation - A legal entity distinct from its members created for the purpose of making a profit. A corporation has continuity of life (regardless of changes in shareholders), centralized management, and free transferability of ownership interests. Shareholders' liability for corporate debts and employees' actions is usually limited to the capital they contributed to the corporation and other corporate assets.

Not-for-profit corporation - A corporation formed for some charitable or benevolent purpose (not for profit making) and generally organized under special statutes for this purpose.

Partnership - A partnership is an agreement between two or more persons to share in the ownership of an unincorporated business. Each partner is the legal agent of the other and can bind the other by acts, including negligence, just as is these acts were performed by himself or herself. Like sole proprietors, partners are also liable for the actions of employees that are within the scope of their employment. Agreements for sharing profits and losses are usually explicit in the partnership contract. A partnership necessarily dissolves when one partner dies or resigns or when a new partner is brought in. The original partnership agreement may provide for operational continuity of the partnership under such circumstances until a new partnership agreement is formalized.

Professional corporation - A corporation which provides personal services to the public of a type which requires a license or other legal authorization. Incorporation does not alter professional responsibility or privilege, nor does it insulate the principal from malpractice liability. Under most professional corporation statutes, a physician is liable for negligent acts committed by persons under his or her supervision. Since only physicians can be shareholders of a professional medical corporation, transfer of ownership interests is restricted to other physicians.

Sole Proprietorship - A sole proprietorship is an unincorporated business owned by a single individual. Although a sole proprietor may employ other physicians, he or she alone receives the proceeds from the practice and is legally responsible for the practice. The management, delegation of authority and financial policy of a sole proprietorship is dictated solely by the owner, and the group is only as permanent as the owner.

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Elements of these definitions were taken from Black, H.C. *Black's Law Dictionary*. 5th Edition. St. Paul, Minn.: West Publishing Co., 1979.